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(NITRANA® and URANA*)

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A-N-L®
Nitrogen Fertilizer

Urea Products

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Pioneering in the development of Nitrogen Division Solutions began in 1929. Ever since then, results of research and field experience of Nitrogen Division technical men have been aimed at helping manufacturers formulate better fertilizers for better profits.

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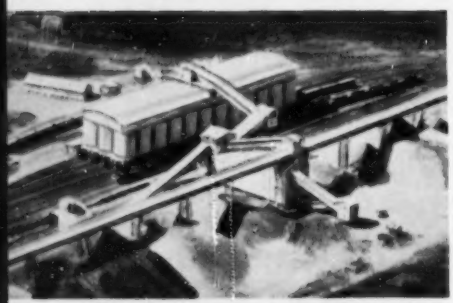

From the air—wet rock storage and drying plant, with dry rock storage silos in background. These silos, 29 in number, have a total capacity of 40,000 tons of dried rock. Under the silos are four runways where 40 railroad cars can be loaded at a time.

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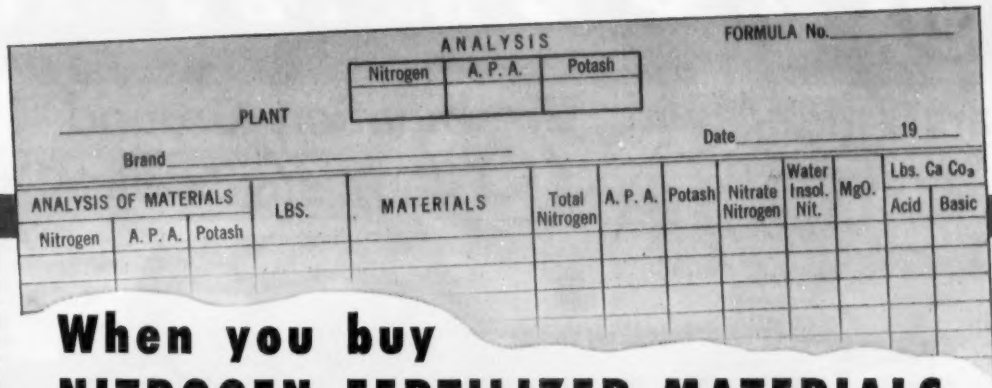

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and what it means to you

When you visit El Dorado or New Orleans you will want to inspect Lion's giant chemical plants where Lion Nitrogen Fertilizer materials are manufactured. You'll be impressed by the painstaking efforts to assure highest quality products... reaching you in first-class condition. This is what we mean by "Controlled Quality"—which can mean a great deal to you.

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and
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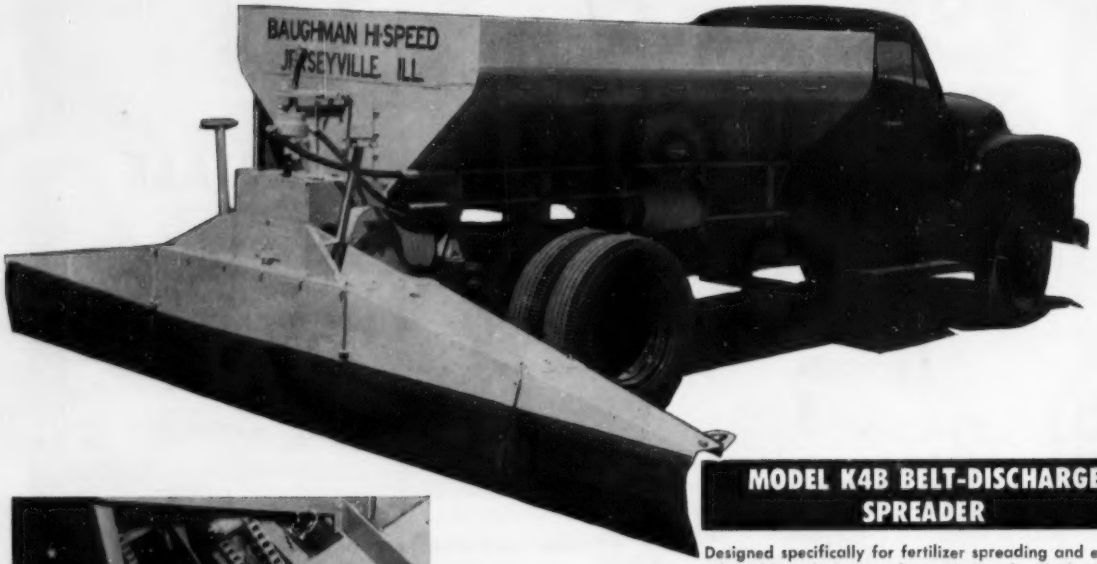
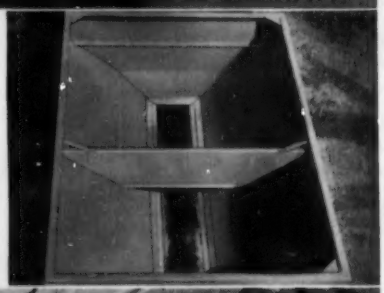
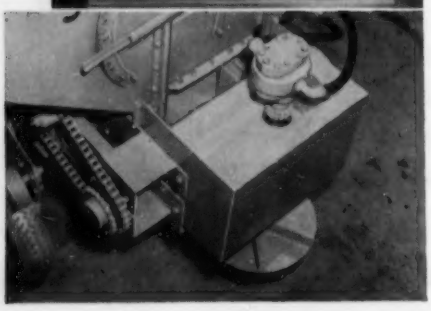


MODEL K4B BELT-DISCHARGE SPREADER

Designed specifically for fertilizer spreading and equally adaptable to lime spreading. Equipped with the Baughman-patented Ground Drive, trouble-free Hydraulic governed and powered Distributor, and the special 4-ply belt for smooth delivery at all speeds. Rugged one-piece welded body. Single or double distributor. Etched plate on body conveniently shows the volumes spread for various materials at various gate settings.





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Doubles your spreading speed. Uniformity regardless of traveling speed. Eliminates "spotting" as well as 75% of replacement worries and maintenance costs. Push-botton cab control, reversible for such operations as chip spreading, oil blotting, etc. No mounting problem. Entire body easily attached to any truck chassis with only 8 hold down bolts.

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Hi-Speed job-fitted

SPREADERS

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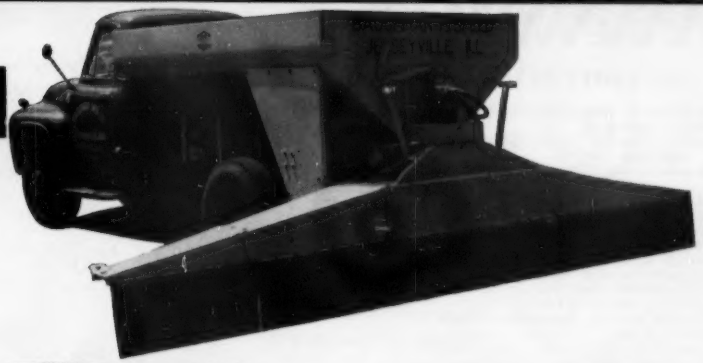
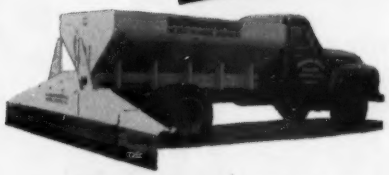
Developed primarily for lime application and equally adaptable for fertilizer spreading. Chain and drag, with new heavy-duty 4" drag design. Ground Drive and Hydraulic governed and powered Distributor features. Single or double distributors. Also features split-bottom dump for off-season use as dump body. Convenient etched plate on body lists useful spread data for various materials at different gate settings.



MODEL K4BO OR K4CO ORCHARD & GROVE BODY

Specially adapted to orchard and citrus grove spreading. The same superior Baughman features: Ground Drive, Hydraulic Distributor, one-piece welded body—plus adjustable distributor that can be dropped for under-the-tree operation; drop-gate design for left-hand spread; body skirts to prevent tree damage. Available in either belt or chain discharge, double or single distributor.



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The "old standby" to scores of operators. Low in price and thoroughly proved by years of performance in the field. Split drive from power take-off powers both distributor and body discharge. Split-bottom dump adds to year round usefulness.

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COMMERCIAL FERTILIZER

ESTABLISHED 1910

August, 1954

Volume 89 No. 2

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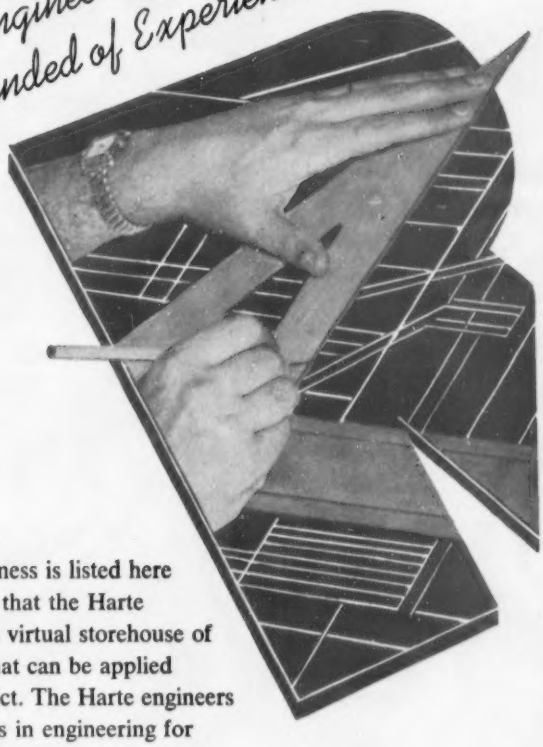

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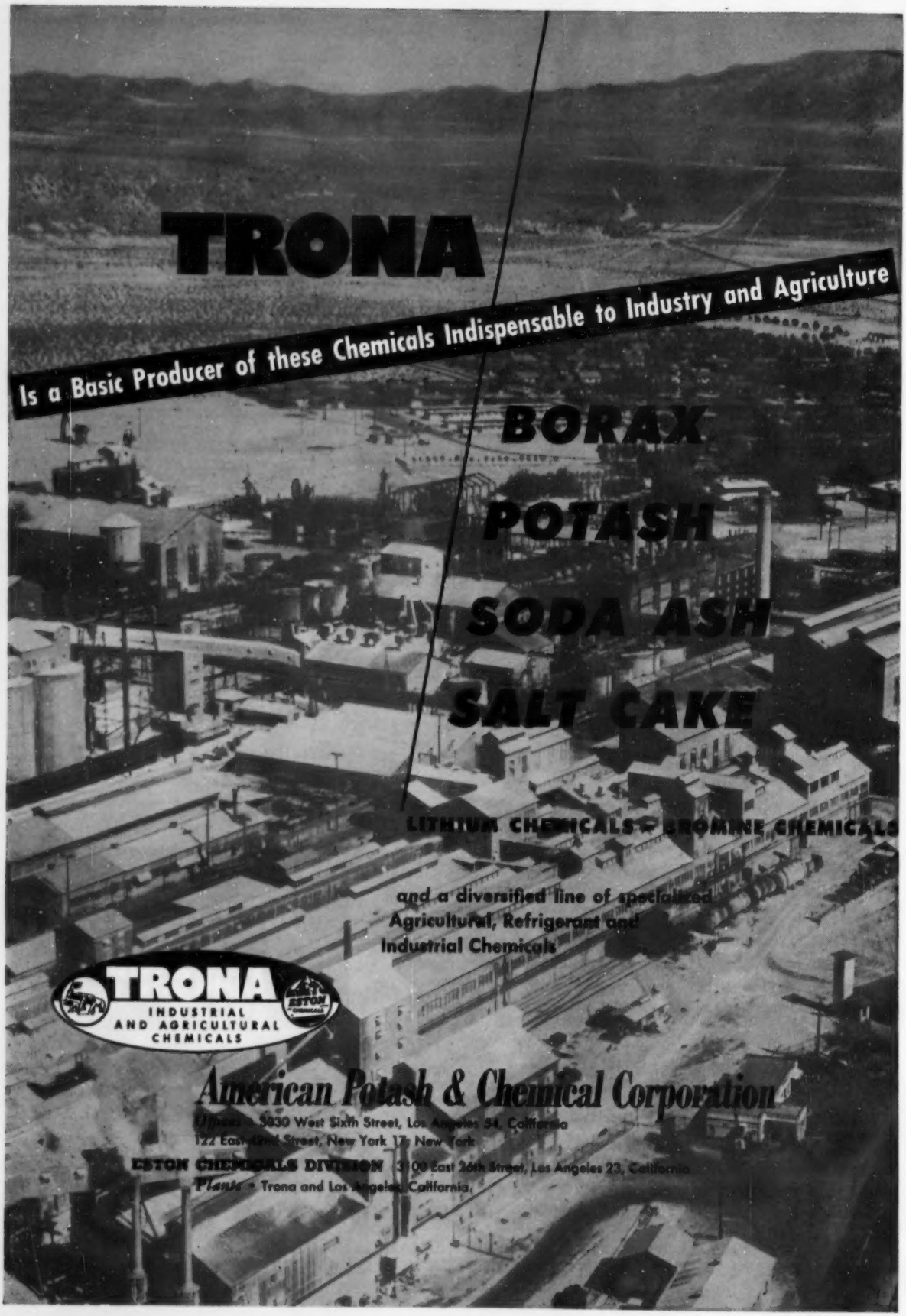
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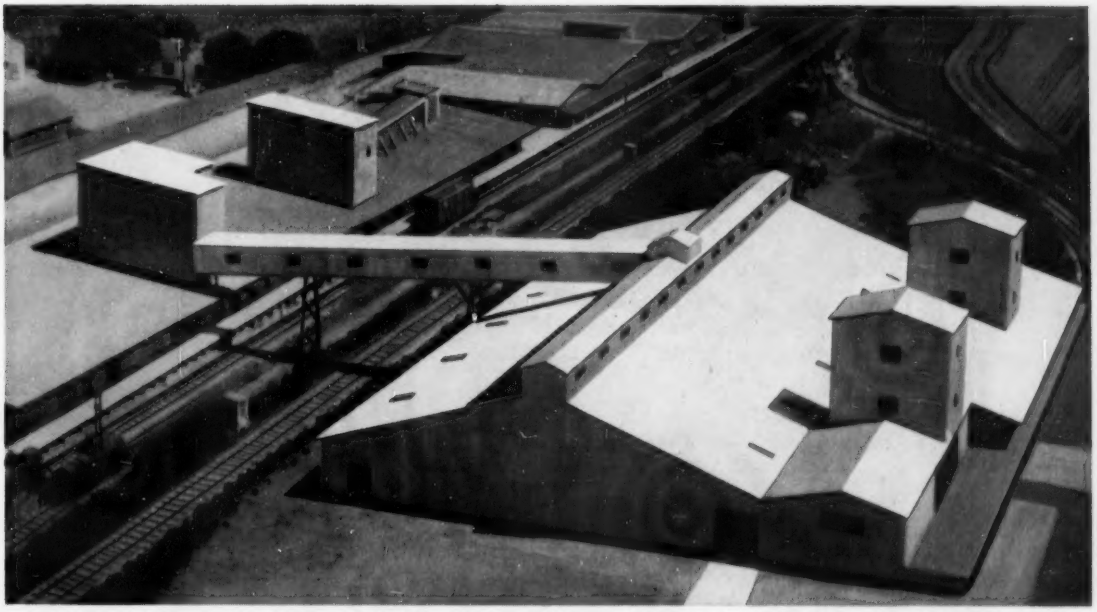

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AMERICAN INDUSTRY BUILDS WITH LURIA

JUST AROUND THE CORNER

By Vernon Mount

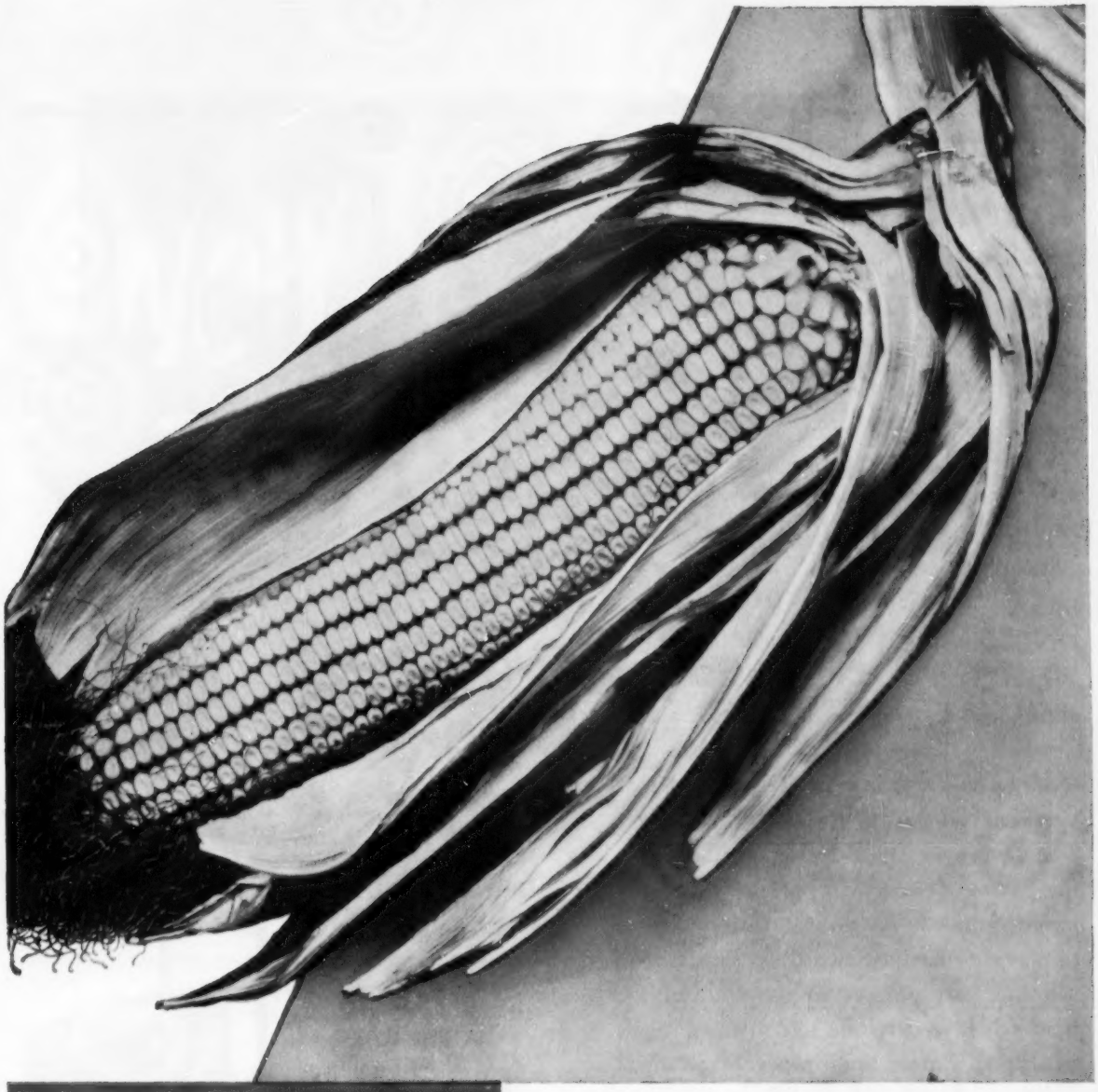
A STRONG ISOLATIONIST TREND is making many a citizen question the billions going into foreign aid, and many a Congressman with his ear to the ground is reflecting this feeling. The fact that the deficit could be wiped out by cancelling foreign aid is a nice talking point.

INGRATITUDE ABROAD is another factor. The more we give or lend, the more vulnerable we seem to be, and the less they love us, across the water. And there seems to be strong doubt that the aid we send, for military purposes, is really being spent for these purposes. And recent events bear this out.

I'M JUST REPORTING the contentions of the isolationist group. As my regular readers know, this department takes no sides, and makes no claim to ownership of any crystal ball. But we have in this country a tremendous surplus of food in storage. If some of the $3,100,000 foreign aid budget were used to send food to the nations that need food, they could then spend that much of their own money on defense...and two problems would have been neatly solved. Perhaps you'll see that happening, soon.

Yours faithfully

Vernon Mount



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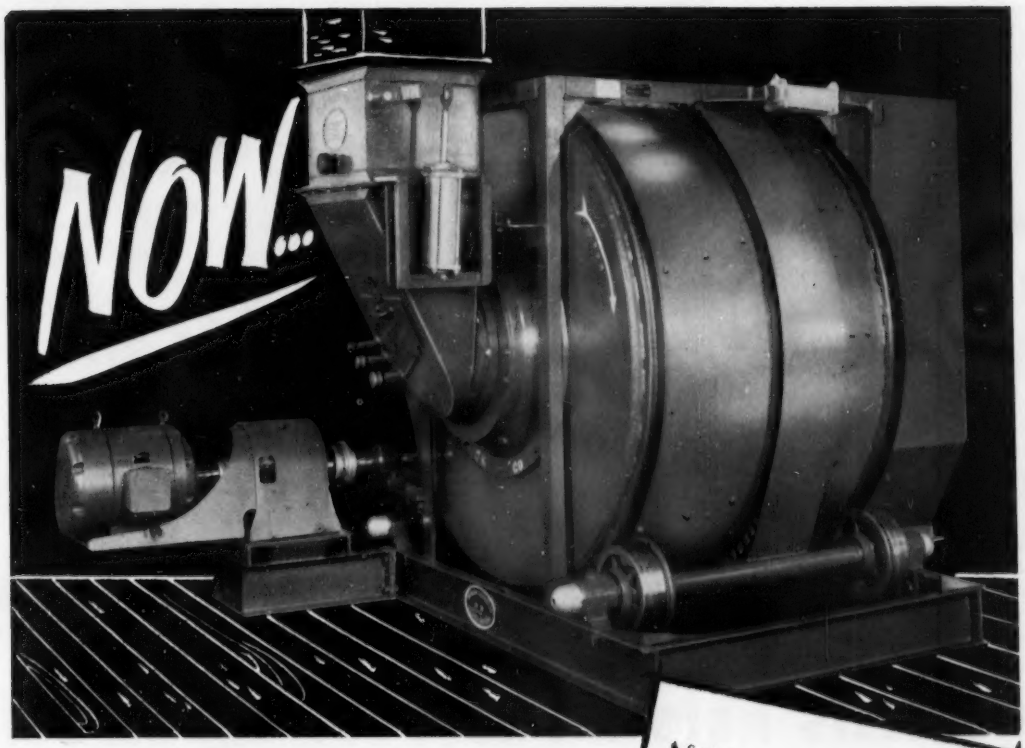

the D-K Mixer

A new addition to the Davidson-Kennedy line of fertilizer machinery is the D-K Mixer. Available in one-half, one and two ton capacities, it is of sturdy, heavy-duty construction with high carbon, high wear resistant steel plate. Mixer flights consist of special alloy steel plates arranged to give complete mixing of dry and semi-dry materials in the shortest possible cycle. The new D-K Mixer, typical of all Davidson-Kennedy fertilizer equipment, will perform efficiently and economically and give a lifetime of trouble-free service. Write today for complete information.

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No. 2 of a series

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Our artists help make your brand *sell!*

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3 NITROGEN SOLUTIONS

Get more N per dollar! Phillips *66* Nitrogen Solutions are well suited to the preparation of high-analysis fertilizers and the ammoniation of superphosphate. These three nitrogen solutions keep handling costs low! Promote rapid, thorough curing!

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Phillips *66* Prilled Ammonium Nitrate contains 33% nitrogen. The small, coated prills or pellets resist caking . . . handle easily. Depend on Phillips *66* Prilled Ammonium Nitrate for uniform, free-flowing properties and top-notch crop response.

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Chase Bag experience costs you nothing, yet it's apparent in the recommendations of every "C"-Man.

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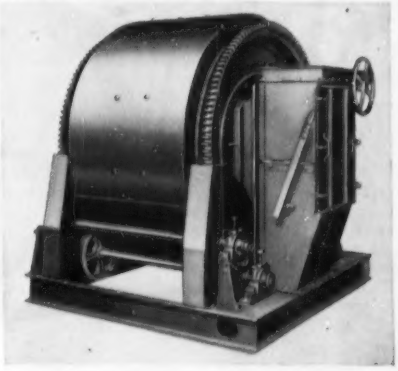
DEN AND EXCAVATOR — speeds processing of superphosphates. Easily operated by two men . . . produces 16 to 40 tons per batch and up to 480 tons per day of superior fertilizer free from lumps. *Continuous Dens also available.*

Ever since 1881, the Sturtevant Mill Company has specialized in designing and supervising the construction of complete fertilizer plants, as well as manufacturing fertilizer equipment from individual machines for specific applications to complete processes.

The experience gained through 71 years of intimate association with the fertilizer industry and its problems gives Sturtevant the expert "know-how" in fertilizer plant design that can save you time and money.

Whether you plan to build a new plant, modernize or buy new equipment, it will pay you to consult Sturtevant Mill. Our engineers, specialists in fertilizer manufacture, are available for consultation. Ask for their services, today. You will keep ahead with Sturtevant.



DRY BATCH MIXERS — 4-way mixing action mixes two or more ingredients into an inseparable, homogeneous mass. Open door accessibility makes cleaning easy. Capacities ¼ ton to 2 tons.

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It's as easy to make a mineralized fertilizer as it is to draw your bath. Tennessee Corporation will custom-mix any combination of minerals to your own specifications. Thus there is only ONE ingredient to add to your regular fertilizer for a completely balanced plant food. It requires no additional labor or mixing facilities, since **TC** Mineral Mixtures come to your plant—in bulk or bag—already carefully mixed in controlled amounts of soluble and readily available forms of Copper, Manganese, Iron, Zinc, Magnesium, and Boron. Cut down on the number of items purchased, on raw material costs, and on handling . . . by mineralizing with a **TC** custom-formulated mineral mixture.

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Jackson B. Hester

Hester Opens Research Lab

Dr. Jackson B. Hester, well known throughout the fertilizer industry for his many thoughtful contributions to agronomy, has established at Elkton, Maryland, the Jackson B. Hester Agricultural Research Laboratories. Here he is offering consultation of agricultural problems, analysis of soils with recommendations, consultation on planning of crop rotations, research on industrial chemicals to be used in agriculture, research on special agricultural problems.

Dr. Hester was for 17 years with Campbell Soups, and for five years with the Virginia Truck Experiment Station before that. He has written more than 200 scientific articles, has appeared before fertilizer and other association conventions, has been honored by the American Chemical Society, the American Institute of Chemists, the American Association for the Advancement of Science, and the American Vegetable Growers Association.

We asked Dr. Hester about the geographical scope of his work and his reply was "We will operate wherever there is an agricultural problem presented".

CFA Publishes Plant Diet Pamphlet

Just off the press is a new 8 page pamphlet published by the California Fertilizer Association "A Balanced Diet For Plants", designed to promote the greater use of complete mixed fertilizers. 30,000 copies are being distributed throughout California by members of the Association to farmers, nurserymen and home gardeners.

Free copies of the pamphlet are available from the California Fertilizer Association, 475 Huntington Drive, San Marino 9, California.

It Seems to Me

by BRUCE MORAN

All too often we find in the newspapers across the country what we call "Neighbor Trouble" items . . . reports of residents near a fertilizer plant, claiming to the town council or the courts that fumes from the local plant are lowering property values, injuring the health of residents and the like.

Usually these charges are disproved, but all too often they cause a temporary shutdown of the plant while the case is argued. And in the meantime they do real harm to the public relations of the plant, and to the industry of which it is a part.

For a number of years we have reprinted the essence of such local news stories in Around the Map, because they demonstrate how important it is for each plant to educate the local press, and through them the local citizenry, as to the great basic value of the fertilizer industry to the feeding of the world . . . and to the fact that fertilizer plants these days are not the odorous institutions the troublemakers would make them out to be.

Look to your own situation . . . have you done all you might to protect your own reputation and that of the industry? It is worth thinking about.

INDUSTRY CALENDAR

Date	Organization	Place	City	State
Sept. 8-10	NACA	Essex & Sussex	Spring Lake	N. J.
Oct. 11-13	Ag Chemists	Shoreham	Chicago	Ill.
Oct. 15	Control Officials	Shoreham	Chicago	Ill.
Oct. 18-19	Fertilizer Safety	LaSalle Hotel	Chicago	Ill.
Oct. 25-28	ASA & SSS		Minneapolis	Minn.
Nov. 18-19	S. C. Safety		Spartanburg	S. C.
Nov. 8-12	Crop, Soil	St. Paul Hotel	St. Paul	Minn.
Nov. 10-12	NFA	Hollywood Beach Hotel	Hollywood	Fla.
Nov. 15-16	CFA	del Coronado Hotel	Coronado	Cal.
Dec. 2-3	Cotton Insect	Adolphus	Dallas	Texas

Among the Regional

FIFTH ANNUAL CONFERENCE OF PACIFIC NORTHWEST ASSOCIATION

The Fifth Annual Regional Fertilizer Conference of The Pacific Northwest Plant Food Association brought soil scientists from the entire Pacific Coast July 20, 21 and 22nd at Klamath Falls, Oregon. The Conference, sponsored by the Soil Improvement Committee of the Association was attended by over 200.

Featured speakers at the conference included Dr. W. L. Garman of the American Plant Food Council, Dr. J. C. Rinehart, U. S. Gypsum Co., and Dr. Albert Ulrich of the University of California.

A field trip took visitors to the Klamath Falls Experimental Area in the Lower Klamath Basin, where visitors spent the afternoon visiting the various trial plots.

An informal dinner meeting was held Tuesday evening with Hal Ogle, President of the Klamath Historical Society giving the historical background from the early days of the Klamath Country. Thursday afternoon visitors were loaded in two busses on a visit to the famous Tulana Farms and Wiliamson ranch, which covers an area of 17,000 acres. This is an area reclaimed from the Klamath lake bed, and is devoted to the raising of barley. A barbecue dinner was served that evening.

A. R. Halvorson, director of the Klamath Experimental Area was the chairman of the Conference.

Hosts next year at Boise will be the University of Idaho.

FEATURES OF NORTHWEST MEETING

At the **Fifth Annual Pacific Northwest Fertilizer Conference,** Klamath Falls, Oregon, July 20, 21, 22, 1954, sponsored by Soil Improvement Committee, Pacific Northwest Plant Food Association, here were some of the subjects on the program.

History and Background of Agriculture in the Klamath Basin, C. A. Henderson, County Agent, Klamath County, Klamath Falls.

Industry Takes A Look At Experiment Station Work, Karl Baur, Pacific Supply Coop., Portland, Oregon.

A Farmer Takes A Look At Experiment Station Work, Ed. Geary, Klamath County Rancher.

The New Outlying Testing Program In Washington, H. P. Singleton, Superintendent, Irrigation Experiment Station, Prosser, Wash.

Soil Fertility Research In Oregon, H. B. Cheney, Head, Soils Department, Oregon State College.

Fertilizer Testing Program In Idaho, G. O. Baker, Head, Dept. of Agronomy, University of Idaho, Moscow, Idaho.

Gypsum In Pacific Northwest Agriculture, J. E. Rinehart, U. S. Gypsum Co., Chicago.

The Principles And Practices of Plant Analysis In Crop Fertilization, Albert Ulrich, University of California, Berkeley.

Field Trip To Tulana Farms, Williamson River Ranch.

Where We Stand Today In Soil Testing, State Soil Testing, Oregon State College, Larry Alban, Washington State College, Mike Reisenauer, University of Idaho, G. O. Baker.

Soil Testing Round Table, H. B. Cheney, Moderator.

OUR FUTURE AND AG RESEARCH

By W. L. Garmon
American Plant Food Council

Nowadays, we hear a lot about population trends in the United States and plans for the development of an expanding agricultural production designed to meet future demands.

Each one of us requires slightly over three quarters of a ton of food annually. A population increase of two and a half million persons annually means that about 2 million tons more food will be needed each year if we are to continue to eat as well as we do now.

Assuming that each acre of land in food production provides us with the equivalent of one ton of processed food products annually, it is apparent that production from about 2 million acres of additional land will be needed every year. This does not take into account the land required to clothe us and provide us with increasing supplies of such commodities as forest products and tobacco.

Of course, we now have surpluses of certain crops. Corn, wheat and cotton are examples.

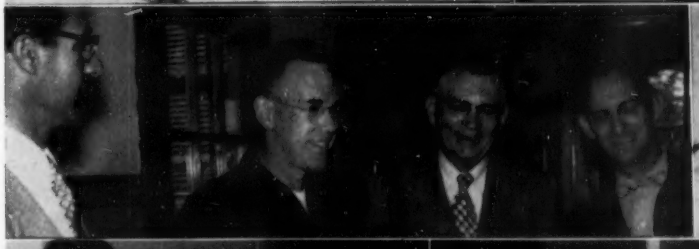
In May of this year, 7.7 million bales of cotton were in government hands, as were 960 million bushels of wheat. In April, the figure for corn was 840 million bushels. At the end of the fiscal year just passed, our warehouses bulged with 6.5 billion dollars worth of farm surpluses. These cost us 700,000 dollars a day for rent, which amounts to 250 million dollars a year, or more than three times as much as the government spent for all agricultural research in the year just ended.

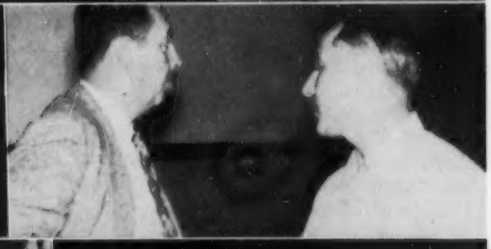
Adjustments in acreages from time to time may be necessary to maintain the supply of given commodities in line with basic requirements.

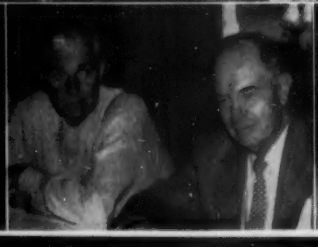
Fertilizer Associations

PACIFIC NORTHWEST PICTURES

1. Buffet luncheon on July 20. 2. F. S. Fullmer, American Potash Inst., Newport Beach, Calif., and F. T. Trembley, Washington Co-Op. Farmers Assn., Seattle. 3. Clay Shelton and Lee Sturges, both with Stauffer Chemical Co., North Portland, Ore., and Hugh Templeton, Balfour, Guthrie & Co., Portland. 4. Jim Russel, Portland; Steve Carlson, Seattle; Tom Cushing, San Francisco; and John Jooper, Portland. All are with Wilson & George Meyer Co. 5. M. E. McCollam, Los Angeles, and Kirk Braun, Portland; both are with American Potash Institute. 6. George Harrison, Nu Life Fertilizer Co., Tacoma, and Lyman Judson, Lynden Dept. Store., Lynden, Wash. 7. M. V. "Bud" Wolfkill, Shur-Crop Corp., Monroe, Wash. 7. John Berg and Don Baldwin, Klamath Falls, and Wayne Austin and Ralph E. Nelson, Oakland, all with Soil Conservation Service. 9. M. G. Felsom, Shell Chemical Co., San Francisco, and Lee Fryer, Chas. H. Lilly Co., Seattle. 10. Bob Goldberg of Seattle and Dr. George Park of San Francisco, both with Balfour, Guthrie & Co. 11. M. E. McCollam, American Potash Inst., Los Angeles, and Dr. Elmo Stevenson, president of Southern Oregon College of Education, who was the luncheon speaker. 12. Bill Martin, Univ. of Calif., and Earle Shaw, Chilean Nitrate Sales Co., Los Angeles.







But, over the long pull ahead, our total production will have to go up and up.

How can we provide for this? Everybody knows that our basic land resources are limited in extent. Arid land can be brought into production in the west through irrigation and wet or swampy land in the southeast through drainage. But, at least for the foreseeable future, not too many acres of such lands can be counted on. Such acres will probably do no more than offset production from submarginal acres taken out of cultivation, and those areas of land which annually are being taken for urban expansion, superhighways, and airfields.

More efficient farm production must be looked upon as being the only answer we have. And accept it we must.

Great strides are being made in present-day agriculture, yet there is much within sight that can be accomplished. We are behind in getting practical research information into use on our farms. A good example is with respect to the use of fertilizers. Almost every farmer could produce what he raises at a lower cost. And, he could produce more on fewer acres. This would be possible with what we know today.

For the future, however, we must not only learn more and more, but must accelerate putting knowledge to use on farms. Scientific research in all areas of agriculture and biology must be intensified and expanded. If the plant geneticist, the plant pathologist, and the entomologist, for example, stopped all research for 12 to 15 years, there would be practically no cotton, tobacco, or small grain and probably very little corn produced anywhere in the United States.

Soil deterioration is still proceeding at an alarming rate in almost every section of the country. It is true, nonetheless, that our wider use of accepted methods of land management, and the restoration of plant nutrients in the form of fertilizers and lime, are of untold significance. Because of these practices, many soils are more productive than they once were, even in their natural state. A recent bulletin from the Connecticut Agricultural Experiment Station attests to this. Yet, the total area of soils, for which such a statement might be made, is quite small. And even these soils are less productive today than they would be had erosion been controlled, and better management practices followed.

As I view critical research needs, taking a look at the next 25 to 50 years, I am inclined to place research in soil physics and microbiology at the top of the list. We do not know how much our production efficiency is being reduced because of lack of knowledge in these areas. It is much easier, for instance, to estimate actual production losses due to inadequate fertilization than it is to estimate what we fail to get because of poor soil structure.

Next in line, I would place research in plant and animal diseases. Losses in both areas have been tremendous in the past, and in spite of progress, which has been nothing short of phenomenal during the past decade, we are barely holding our own. In fact, I doubt seriously if we are. Although I do not have figures at hand, I believe it would be safe to say that actual crop and livestock losses, due to diseases, were greater in the period 1950-53 than in the same period period 10 years earlier.

Experiment stations in the North Central region have estimated that the poultry industry suffers a 40 million dollar loss annually from Newcastles disease alone. An estimate by the Indiana station placed losses to animal agriculture in 1951 at 2 billion 791 million dollars, as a result of death losses. This figure would be much larger if it included losses from nonfatal diseases resulting in stunted growth, inefficient feed utilization, and lowered production.

Efficiency of production can never reach a desirable level so long as diseases take their heavy annual toll. The full potential return from fertilization, improved plant varieties, and higher quality livestock can never be realized until we know how to control diseases.

Next in importance, I would place research in entomology. What has just been said for diseases applies almost equally well to insects. In no other area has progress been more widespread than in the development of new chemicals for combating insects. Yet, annual crop and livestock losses, due to insects, continue to take a tremendous dig into every pocketbook every year. So, as it was with diseases, until we learn to control insects the farmer can never reach the level of efficiency he is striving to attain.

I will make no effort to analyze research needs beyond the fields

(Continued on page 62)

Missouri Council Elects Francis Best

Francis E. Best, Missouri representative for Spencer Chemical Company, who was named president of the Soil Fertility and Plant Nutrition Council of Missouri at a special board meeting held recently in St. Louis.

The council consists of representatives of all elements of the Missouri plant food industry. Elected vice-president was Henry K. Lange of the Lange Brothers Fertilizer Company in St. Louis, and secretary-treasurer is Paul Doll, secretary of the Missouri Limestone Producers Association, Jefferson City.

Also on the board of directors, in addition to the officers, are: Perry Onstot, agronomist with Thurston Chemical Company, Joplin; Marvin Ditty, sales manager of Darling & Co., East St. Louis, Ill., and John J. Miller, Jr., of the Farm Service Corporation, Montgomery City.

Main objectives of the council are to promote adequate use of plant foods, advance scientific methods and provide aid for further research. In addition to the materials suppliers and distributors, a membership embodying the industry, raw materials suppliers and distributors, a number of state and federal agricultural workers and farm editors are honorary members of the council.

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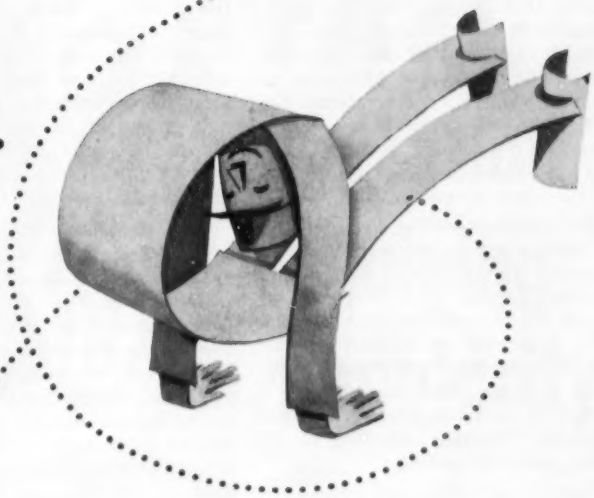
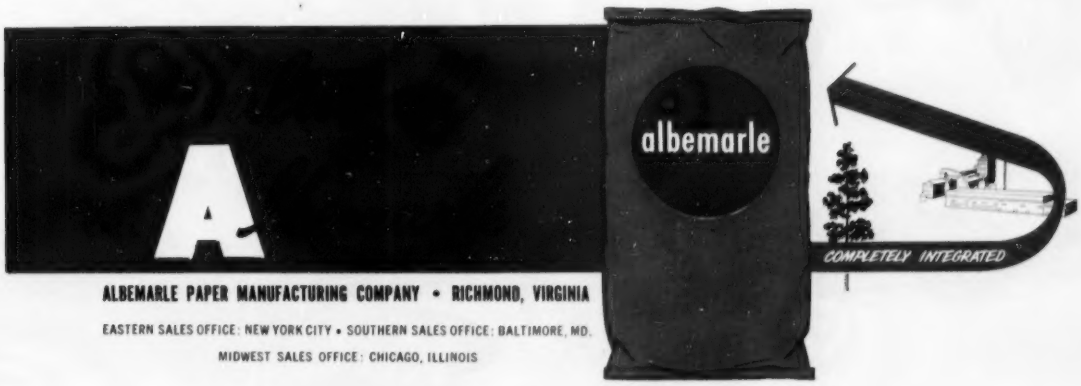


ALBEMARLE'S Multiwall Bag operation is, in many ways, as flexible as its Trade Figure! That is because Albemarle is a completely integrated mill . . . growing its own pulp wood, milling, coloring and printing its own stout Kraft paper, making its own plain and valved, pasted and sewn Multiwall bags in many plies.

Such flexibility means much to customers who want expert color matching, sharp printing and reliable deliveries.



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GEORGIA SOCIETY STAGES FOUR LOCAL MEETINGS

The four district fertilizer conferences in Georgia were held July 7, 8, 13, 14. Sponsored jointly by the University of Georgia AES and the Georgia Plant Food Educational Society, the meetings followed the theme of "Concrete Action to Obtain Acceptance of College Approved Fertilizer Grades."

The program outline was identical at each meeting, with a morning assembly at the Branch Experiment Station followed by a tour conducted by the director of each station. After a luncheon the district PFES vice president directed the afternoon session, which opened with a brief talk on Georgia's Agricultural Research Program by George H. King, associate director.

Next on each program came J. R. Johnson, extension agronomist, who discussed Fertilizer Usage and College Fertilizer Recommendations. In illustrating recommendations of application rates for major crops in the state, he used the new flannelboard technique to focus attention on each requirement. Following his talk, Mr. Johnson distributed a just-off-the-press circular charting the data presented in the flannelboard sequences and also a pamphlet analyzing by crops fertilizer usage in the state last year.

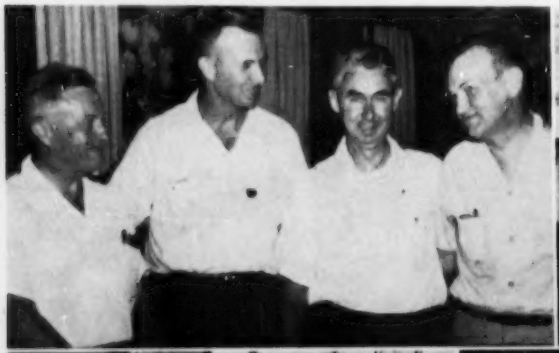
Third feature of the program was a panel discussion on action toward acceptance of college-approved fertilizer grades. The panel, led by the district agent, included J. R. Johnson as the extension specialist and Elton Perry as the ASC (formerly PMA) representative along with rotating representatives from the soil testing laboratories, county agents, fertilizer manufacturers, fertilizer dealers, and farmers. The soil testing laboratories were represented by Dr. R. H. Webster in the northwest meeting, Dr. Joel Giddens in the northeast, and R. L. Carter in the southeast and southwest. Panel discussions were led by these AES district agents: northwest, M. H. W. Collins; northeast, Sid G. Chandler; southwest, J. C. Richardson; and southeast, L. C. Westbrook.

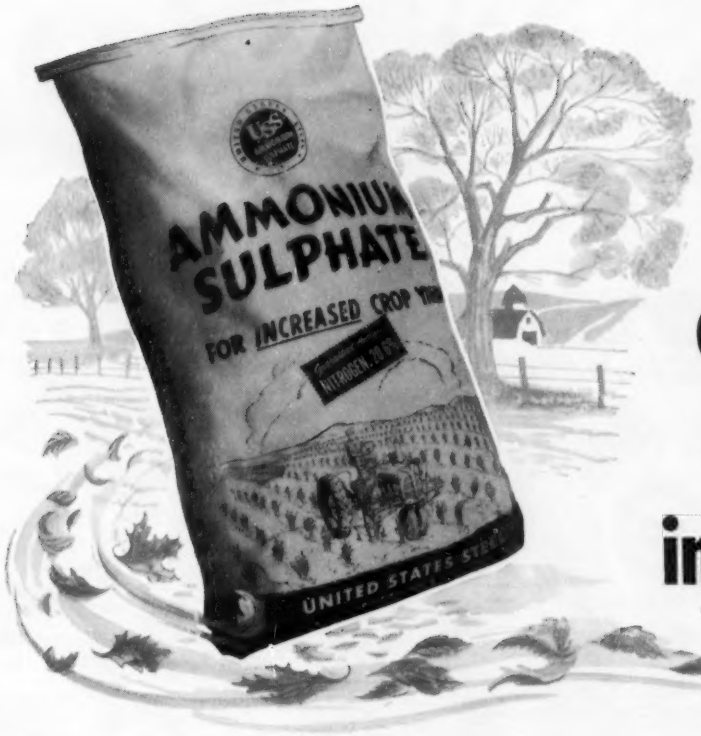
In general, the panel discussions brought out the willingness of dealers and manufacturers to adhere to the new and smaller approved grade list provided soil analysis recommendations and county agents are able to confine the consumer demand to these grades. Farmers themselves seem to prefer the use of good all-round fertilizers of higher analysis, it was brought out, so that there is less hauling involved and any purchases in excess of needs for a particular plot can be used to good advantage elsewhere. Most comments indicated that sales this year had tended strongly in favor of the basic 4-12-12 formula.

Following the panel, Dean C. C. Murray, AES director, summarized the purposes and conclusions of each meeting and called for concerted action to achieve the desired results.

The northwest meeting was held on July 7 at the Northwest Georgia Station, Calhoun, with attendance exceeding 110; Dean Hayes led the

1. GPFES Officers: W. A. Higginbotham, Jr., president (Armour Fertilizer Works, Albany), John L. Sanders, Northwest District Vice Pres., (Spencer Chemical Co., Atlanta), Dr. J. Fielding Reed, Secretary-Treasurer (American Potash Institute, Atlanta), Joe M. Shepherd, Director at large (Virginia-Carolina Chemical Corp., Atlanta). 2. Panel on acceptance of approved fertilizer grades: Elton L. Perry, ASC (PMA), J. R. Johnson, Extension Agronomist, Boyd White, farmer, Glenn F. Wiley, County Agent, Dr. R. H. Webster, Soil Test Laboratory, Henry Mauldin, fertilizer dealer Jim Bergeaux, (Tennessee Corp.), manufacturer, M. W. H. Collins, district agent. 3. Flannelboard technique used by Extension Specialist J. R. Johnson in outlining application rate recommendations. 4. Dean C. C. Murray, College of Agriculture, who summarized the program. 5. Visitors at the meeting were two district agriculturists (equivalent to our district county agents) from the Philippine Islands, who are in the U. S. to study methods and procedures: Pedro C. Collodo, who is studying at Carrollton, Ga., and Ambrogio M. Lontok, who is studying at Cedartown, Ga.





FALL application is gaining in popularity

Get set for a bigger demand this season

AGRICULTURAL authorities, extension services, and farm publications are now pushing fall fertilizer application. And more and more farmers are getting on the bandwagon. Fall application of nitrogen has been found to speed up the breakdown of organic matter in the soil and to get crops off to an earlier, faster start in the spring. Of course, the success of fall fertilizing demands the ammonia form of nitrogen that will not leach out during the long winter.

That's why USS Ammonium Sulphate is so highly recommended as the nitrogen source. It doesn't leach out, but is there in the spring when the plants need it. In addition, USS Ammonium Sulphate is popular with farmers because it's free-flowing . . . won't cake and clog equipment and is less corrosive. That makes it an easy mixer too.

It's available in bulk for mixing, or in sturdy, moistureproof 100 pound bags for sale for direct application. USS Ammonium Sulphate will not set up in storage.

Don't miss out on this big, new and profitable opportunity. Check your stocks today and, if your supply is low, call our nearest coal chemical sales office for prompt delivery.

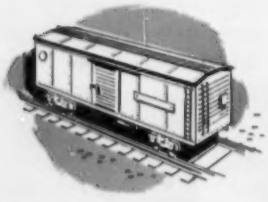
USS AMMONIUM SULPHATE USS

UNITED STATES STEEL

STOP BAG SLIPPING WITH...

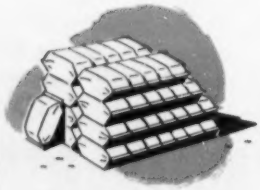
Hudson's New

Stop this warehouse hazard!

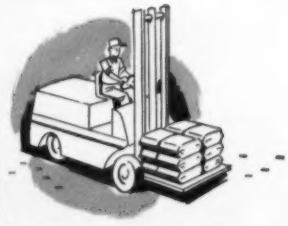


We humped a freight with *half* a carload . . . *not a single Hudson Non-Slip Ink* sack slid or broke!

Do you ship by truck? Buy Hudson Bags with Non-Slip Ink and watch your "Slip-break" losses shrink!



Non-Slip Ink puts an end to sacks sliding under their own weight and falling apart like a house of cards!



Sudden stops no longer mean sudden losses from bags that slip, slide and break!

Non-Slip Ink!

...at no extra cost!

Takes Skid Out of Your Bags!

Again Hudson puts your shipping problems "in the bag" for you . . . with this exclusive, specially developed NON-SLIP ink.

What's more, there's NO EXTRA charge for this ink! Stack this up with all the other superior features of Hudson multi-wall sacks and you know you're buying the best bags money can buy when you make the order out to *Hudson!*

Here's Why:

Best Protection — cuts package loss caused by slipping — Takes rough handling in transit! Hudson strongest by far!

Less Re-Handling — because slipping in packing and storage is virtually eliminated — No double handling.

Free Moving — designed for perfect handling on chutes and conveyors.

Labor Savings — easier and faster to handle — No fumbling with Hudson's "Sure-Grip Multiwalls."

Send for complete story today!

HUDSON PULP AND PAPER CORP.
Dept. CF-8A, 477 Madison Avenue
New York 22, New York

***Yes!* We'd like the whole story on Hudson's new NON-SLIP INK.**

NAME_____ TITLE_____

COMPANY_____

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CITY_____ ZONE____ STATE_____

tour and District Vice President John L. Sanders (Spencer Chemical Co., Atlanta) presided at the afternoon session. Site of the northeast gathering was the College Experiment Station at Athens, July 8, with attendance over 118, Dr. Hayden Rogers led the tour and District Vice President Malcolm Rowe (Rowe Warehouse & Fertilizer Co., Athens) presided at the meeting. The Southwest Georgia Station at Plains was the location of the July 13 conclave, and more than 199 followed N. D. McRainey through the station tour and later attended the meeting conducted by District Vice President J. I. Davis (Southeastern Liquid Fertilizer Co., Albany). The final gathering, with more than 123 attending, was held at the Southeast Georgia Station in Midville on July 14; Orien Brooks was host to the tour and District Vice President Charles Ellis (Mutual Fertilizer Co., Savannah) presided at the afternoon meeting.

VIRGINIA-CAROLINA INSTITUTE HEARS SALTER AND JACOB

Fertilizer manufacturers of Virginia and North Carolina met on July 16 at Washington and participated in a tour which covered the highlights of the 12,000-acre experimental station maintained by U. S. D. A. at Beltsville.

The 75 manufacturers making the trip as members of the plant food institute of Virginia and North Carolina heard Dr. R. M. Salter, chief of the plant industry division, and K. D. Jacob, head of fertilizer technology for USDA, discuss research new discoveries and related matters coming under their respective supervision. Other staff participants were Dr. Louis B. Nelson, head of soil and water management, and Dr. J. H. Martin, who conducted the tour.

The group, including about 20 representatives of the fertilizer industry in the Norfolk area, observed a special demonstration of the progress being made in cross planting tobacco to improve quality and watched the latest uses to which herbicides are put to eradicate weeds. A visit to the livestock quarters also was on the itinerary as well as an inspection of that section of the station which is devoted to the culture and development of field, lawn, park and pasture grasses.

Among other principals on the annual summer outing were E. Y. Floyd, Raleigh, N. C., executive director of the institute, the primary purpose of which is to promote better agriculture products and improve farming techniques, and Dr. H. L. Dunton, chief of agronomy at Virginia Polytechnic Institute, Blacksburg.

James H. Culpepper Jr., vice president of the Smith-Douglass Co., Norfolk, is president of the institute. Other officers are G. F. Seymour, Weil's Fertilizer Works, Goldsboro, N. C., vice president; W. M. Campbell, Dixie Guano Co., Laurinburg, N. C., secretary; and N. S. Stokes, Dixie Chemical Corp., Kinston, N. C., treasurer.

Horticultural Congress Meeting in Netherlands

The 14th International Horticultural Congress—or to put it as it came to us—"XIV International Tuinbouwcongres" will meet August 29th to September 6th at Scheveningen, Netherlands, by invitation of the Netherlands Government. In addition to general meetings there will be special section sessions covering specialized subjects, excursions to the various points of special horticultural interest which abound in the Netherlands, including the famed flower festival in Amsterdam. For full details, write Dr. G. de Bakker, Secretary, Bezuidenhoutseweg 30, The Hague, Netherlands.

CANADIAN PRODUCERS MEETING

The Manoir Richelieu at Murray Bay, Quebec, in Canada was the scene of the meeting staged by the Plant Food Producers of Eastern Canada July 1, 2, 3, and 4—their ninth annual convention.

From the very first day there was festivity aplenty with a cocktail hour, banquet and dance. The group received the province's welcome from the Honorable Gaspard Fateaux, Quebec's lieutenant-governor, at the dinner.

Friday's morning program, under Chairman A. Mooney of Canada Packers in Quebec, featured talks by Dr. William A. Albrecht, chairman of University of Missouri's Department of Soils, who spoke on "Fertilizer's Service in Plant Nutrition," and Dr. Russell Coleman, NFA president, whose subject was "Developments in the U. S. A. on Fertilizer Usage."

The afternoon session, chairmaned by Earle M. Grose, United Co-Operatives of Ontario, Toronto, heard an address on "Canadian Fertilizer Facts and Fancies" by Dr. P. O. Ripley, chief of Field Husbandry Division, Experimental Farms Service, Ottawa, and a discussion of "Agricultural Public Relations" by Louis H. Wilson, APFC vice president.

Highlights of Friday evening were a cocktail hour on the terrace and "keno" played in the Casino.

Saturday was devoted to a morning of sports and an afternoon of relaxation, followed by dancing that night. Sunday afternoon saw an obstacle golf match with a cocktail hour and buffet supper preceding the presentation of prizes Sunday evening.

Ladies' entertainment, under the chairmanship of Mrs. H. H. Skelton of Montreal, featured golf, a scenic tour and a bridge party.

KEY TO CANADIAN PICTURES

1. E. M. Kolb, New York, Nelson Wendt, New York, C. W. Jarvis, Toronto, V. B. Lillie, Montreal, Charles H. Withers, Montreal. **2.** Mrs. Leahy, Baltimore, Mrs. W. Caspari, Jr., Baltimore, Mrs. Clove, New York, Mr. Leahy, Baltimore. **3.** Mrs. John Zimmer, New York, Mrs. Mungall, Montreal. Mrs. Zimmer was so enthusiastic about the convention that she came in spite of a broken ankle. **4.** Dr. & Mrs. Wm. Albrecht, Columbia, Mo. **5.** E. J. Wain, Montreal, R. L. Hockley, Baltimore, Dr. R. H. Gray, Montreal, and S. B. McCoy, Chicago. **6.** F. E. Smith, Jr., Washington, D. C., D. Fangmeyer, Baltimore, with a scotch hat on! **7.** Dr. T. H. Mather, Montreal, Mrs. John Foy, Atlanta. John Foy, Atlanta, Mrs. T. H. Mather, E. M. Grose, and Mrs. Grose, Toronto. **8.** E. M. Kolb, New York, R. A. Stone, Ingersoll, C. W. Jarvis, and H. Sewell, both from Toronto. (Mrs. Sewell was in charge of the golf tournament). **9.** Dr. & Mrs. P. O. Ripley, Ottawa, on the putting green **10.** W. Caspari, Jr., Baltimore, V. Lillie, Mr. & Mrs. Charles Withers, all from Montreal. **11.** Chief Moose Herb Skelton, Montreal, D. S. Aitken, Chatham, Ont. **12.** G. D. Mungall, Montreal, B. Wagner, Jr., Baltimore, C. M. Wark, Toronto, Dallas Culver, Seaford. **13.** Mrs. H. Smith, New York, Mrs. W. Caspari, Baltimore, Mrs. C. E. Gettinger, Philadelphia, Mrs. F. C. Sherry, New York. **14.** Louis H. Wilson, Washington, D. C., D. T. Fangmeyer, Baltimore, Mrs. Wilson, Mrs. Aiken, Mrs. C. W. Jarvis, Toronto, Chairman of convention prize committee. **15.** N. E. Dresser, Calais, T. E Rogers, New York, Bill Morgan, Chicago, Louis Wilson, Washington.

COOPERATIVE PROGRAM

The National Joint Committee on Fertilizer Application
and
The American Society for Horticultural Science
Monday, September 6, 1954
University of Florida
Gainesville, Florida

Morning Session

Presiding: J. D. Barnard (Green Giant Company), Vice Chairman, The National Joint Committee on Fertilizer Application

9:30 Opening Remarks—George B. Nutt (Clemson Agricultural College), General Chairman, The National Joint Committee on Fertilizer Application

9:45 Where Are We Going on Fertilizing Horticultural Crops—A. Lee Towson (Seabrook Farms Co.), President, Vegetable Growers Association of America, Inc.

10:30 What's New in Fertilizing Deciduous Fruits—A. L. Kenworthy, Associate Professor of Horticulture, Michigan State College

11:15 Inclusion of Insecticides, Fungicides, and Herbicides in Fertilizer—K. D. Jacob, Head, Section of Fertilizer and Agricultural Lime, U. S. D. A.

Afternoon Session

Presiding: George B. Nutt, General Chairman, The National Joint Committee on Fertilizer Application

1:30 How to Apply Trace Elements—J. R. Beckenbach, Associate Director, Florida Agricultural Experiment Station, Gainesville, Florida

2:30 How to Make Research Work in the Field (Panel)
Charles H. Mahoney (Moderator), Director of of Raw Products Research Bureau, National Canners Association
J. D. Barnard, Agricultural Research Consultant, Green Giant Company
H. G. Gauch, Professor of Plant Physiology, University of Maryland
E. S. Haber, Head, Department of Horticulture, Iowa State College
J. A. Rigney, Head, Department of Statistics, North Carolina State College
M. T. Vittum, Associate Professor of Vegetable Crops, New York State Agricultural Experiment Station

4:00 Fertilizer Application Equipment Exhibit and Demonstration

MARKETS

ORGANICS: Purchasing of fertilizer organics for the past several weeks has been quite active on the part of fertilizer manufacturers contracting for their new seasons requirements. Domestic Nitrogenous producers are in heavily sold position at prices ranging from $3.00 to $3.90 per unit of Ammonia, bulk f.o.b. production points. Imported Nitrogenous in very limited quantity is indicated around $4.35 to $4.75 per unit of Ammonia, bagged c.i.f. Atlantic ports. The price of Chicago Activated Sludge Tankage was announced recently at $2.75 per unit of Ammonia and 50c per unit of APA bulk f.o.b. Chicago for seasons requirements and sales have been active for this popular organic.

CASTOR POMACE: One of the principal New Jersey producers is currently shut down and not expected to begin operations until after Labor Day, and the other New Jersey producer has only a limited quantity available for summer shipment at $27.00 per ton bagged f.o.b. New Jersey shipping point. Texas and Oklahoma Castor Pomace production during the past season was approximately 10,000 to 11,000 tons and last sales were $18.50 per ton bagged f.o.b. Texas point. There is no more available from the current production. Because of drastically reduced acreage, Department of Agriculture estimates for the new season the production of approximately 25% Castor Beans compared with the past season. This will mean probably approximately 2500 tons Castor Meal from the Texas/Oklahoma area during the new season.

DRIED BLOOD: Offerings are light and the Chicago market is around $7.75 per unit of Ammonia unground in sacks. The New York market is around $8.50.

POTASH: Purchasing of contract tonnages from domestic sources are reported good but shipments of material at this time of the year are very slack. Imported Muriate is indicated at a few cents under the domestic producers prices at the ports and a movement is afoot for the railroads to reduce rates to ports from Carlsbad by $1.50 per ton. Imported Sulphate of Potash is indicated at around 90c per unit K_2O bulk ex-vessel Atlantic ports.

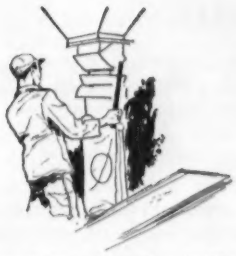
GROUND COTTON BUR ASH: That excellent source of Potash, primarily in the form of Carbonate of Potash and testing currently 35% to 38% K_2O, is available for immediate and future shipment. Delivered costs approximate delivered cost of domestic Sulphate of Potash.

PHOSPHATE ROCK: Prices are firm and supply is adequate with probable upward adjustment in price soon on account of increased labor costs.

SUPERPHOSPHATE: The market on normal Superphosphate is rather quiet, which is to be expected at this time of year. Price of Triple Superphosphate from Florida sources is the same for the new season as prevailed in the past season—98c per unit of APA bulk f.o.b. Tam-

(Continued on page 69)

in the bag



for a better balanced complete fertilizer!

on the bag

for positive quality identification . . . greater sales appeal!

added sales

with Sul-Po-Mag

fertilizers with Sul-Po-Mag produce the results that win brand loyalty!

Water-Soluble Double Sulfate of Potash-M—
($K_2SO_4 \cdot 2MgSO_4$) 22% K_2O—18% [illegible]

Sul-Po-Mag

Sul-Po-Mag, produced exclusively by the *Potash Division*, supplies a properly balanced combination of *sulfate of potash*—and *sulfate of magnesium*. Soluble magnesium is so extensively used in magnesium-deficient crop-growing areas, it is often called *the fourth element* in the fertilizer bag. The Potash Division mines and refines at Carlsbad for fertilizer manufacturers: *Muriate of Potash*, *Sulfate of Potash* and *Sul-Po-Mag*.

potash division INTERNATIONAL MINERALS & CHEMICAL CORPORATION • GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6

ARKANSAS

Recent completion of a new mixing plant addition means that the **Arkansas Farmers Plant Food Co.**, North Little Rock, has developed into a $1,540,000 industry in just five years.

The new addition enables the company to make its own superphosphate.

The enlarged plant now has two and one-fourth acres of floor space under one roof and the project just completed finished the building program envisioned by leaders of the organization when plans were first made for the company.

The plant already has shipped to farmers in every Arkansas county since production got underway in 1950.

It was the first plant food company to initiate direct delivery of anhydrous ammonia to storage tanks on the farms in Arkansas.

Major part of the $500,000 addition just completed is the Broadfield phosphate acidulating unit developed by **M. D. Broadfield**, general manager of the Plant Food Company.

Mr. Broadfield, is widely known for his achievements during a lifetime in the fertilizer business.

In 1919, he began working on a pilot plant in a small blacksmith shop and by 1926 had completed his experiments which resulted in his applying for patents covering the process and machinery he had developed.

The first unit was installed in the plant of the **Georgia Fertilizer Co.**, Valdosta, Ga., in 1929. This was the first improvement made in the manufacture of superphosphate and it attracted the attention of the entire fertilizer industry. This first installation is still in operation.

The **Phosphate Acidulating Corp.** was formed to handle the sales of the Broadfield Unit and the contract was made with the **Atlanta Utility Works**, East Point, Ga., for the manufacture of the equipment. Patents were obtained not only in the United States but in 18 foreign countries and in 1933 headquarters were established in London as well as New York.

Mr. Broadfield came to Arkansas in 1941 when the **Arkansas Fertilizer Co.** installed a Broadfield unit and remained as production manager with them until 1949 when he left to promote a farm-owned fertilizer plant which developed into the Arkansas Farmers Plant Food Co.

An interesting sidelight on the development of the Arkansas concern is the credit it has publicly given to suppliers. We quote, complete, a recent news release:

Many manufacturers and suppliers contributed to construction of the Arkansas Farmers Plant Food Company's $1,500,000 mixing plant.

The cost is represented by structural steel, corrugated siding and roofing, rock pulverizers, phosphate acidulating units, conveyor belts and other material and pieces of equipment required to build and operate one of the nation's modern fertilizer factories.

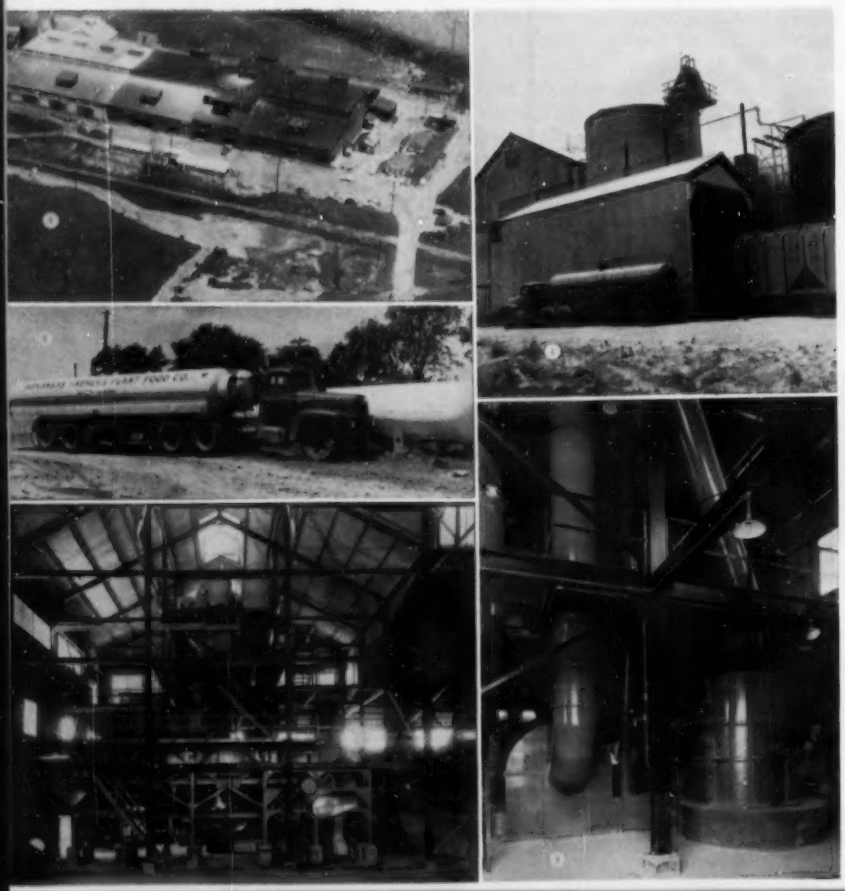
The **Phosphate Acidulating Corporation** of New York and **E. K. Thomason** of the **Atlanta Utility Works** furnished drawings for the plant and assistance in placing the setup in operation.

Another piece of equipment used in conjunction with the Broadfield Unit was supplied by the **Bradley Pulverizer Company** of Allentown, Pa. It is the Bradley Pulverizer used to pulverize the phosphate rock before the acidulation process.

Arkansas Foundry Company supplied structural steel, corrugated roofing and siding and a part of the anhydrous ammonia equipment. **Big Rock Stone and Material Company** provided the ready-mixed concrete. The entire construction is of steel and concrete.

Water is used in the manufacture of superphosphate. The **Layne-Arkansas Company** supplied the well and equipment.

1. Aerial view of the Arkansas Farmers Plant Food Company's factory at North Little Rock, Ark.; white portion of the roof indicates new $500,000 plant addition just completed. 2. New transport for delivering anhydrous ammonia to farmer-owned storage tanks. 3. Interior photo showing installation of Broadfield continuous mixer and den. 4. Rock and acid storage facilities showing covered rail discharge shed and tank truck. 5. Installation of Bradley Pulverizer 66" pneumatic mill for grinding phosphate rock.



Other firms supplied equipment for operation of the anhydrous ammonia farm delivery service. The transport trailer and tank came from **J. B. Beard Co.** of Shreveport; the tractor from **International Harvester Company** of Little Rock, the field applicators from **Gotcher Equipment Company** of Clarksdale, Miss.

Conveyors, **Hough Payloaders** and other labor saving devices were supplied by **Atlanta Utility Works** and **Little Rock Road Machinery Company.**

Gregory Heavy Hauling, Inc., did the excavation and earth-moving work.

Among others that contributed to the plant's construction were **Mill and Mine Supply Company, Fagan Electric Company, Lion Oil Company's Chemical Division, Deere Co.,** and **Pine Bluff Chemical Corporation. Bemis Bros. Bag Company** makes the fertilizer containers.

CALIFORNIA

Argentine Mining are going to build that sulphuric plant at Rico to the tune of $1,500,000 and hope to have it in operation by the middle of next year. Most of the sulphuric will be going to uranium operations in the vicinity.

* * *

Pomona Fertilizer Co. has sold its facilities to **Plant Food Corporation** of Los Angeles.

FLORIDA

Wilson & Toomer have begun construction of a new, one-story, concrete and steel warehouse in Jacksonville, to cost around $50,000.

West Coast Fertilizer, Tampa, had a recent blaze, but trucks from 3 fire stations put it out quickly and with slight damage, according to plant manager K. E. Peterson.

IDAHO

Simplot has encountered neighbor trouble at the American Falls installation, where one Mike Koseris, night club proprietor, complains that their fertilizer plant right across from his bistro has cut the value of his property from $50,000 to $15,000. On the other hand, in Southern Idaho, Simplot has provided $100 worth of fertilizer for each county south of the Salmon River, which is being used to make 4-H Club members "research partners of J. R. Simplot" . . . not to mention future friendships.

ILLINOIS

Armour lost to fire a half-million dollars worth of the plant in Chicago's stock yards which produces fertilizer and explosives, with a firewall between. Volunteers pumped the explosive gases, via pipeline, to buildings two blocks away, while fifty pieces of firefighting apparatus fought the blaze on the fertilizer side of the wall. None was injured.

* * *

Smith Equipment & Supply Co., Chicago, has come up with an ingenious use for fuel oil tank trucks in the off season. **Archer Smith** got the idea when his own oil tanks were being filled. As he sells a liquid fertilizer, known as Fertil-Ade, he realized that such trucks are generally idle during the season when Smith's need for application equipment was greatest. He induced an oil outfit to convert so that the tank trucks could be used both ways, and now they are keeping busy and Smith is selling more Fertil-Ade. Smart! Some 100 oil jobbers are now in the field. Their trucks can handle about 2000 gallons per load, and they figure they are making a daily hundred dollars per truck by the operation.

* * *

Illinois Farm Supply broke ground as scheduled for their plant at Tuscola, complete with the Mayor and other visiting dignitaries present and saying kind words of welcome and greeting. President **Fred E. Herndon** replied in kind, and a good time was had by all at a luncheon after which slides were thrown on a screen to acquaint the visitors with the statewide production program of the Supply concern. The Tuscola plant, as we have reported, is a $1,250,000 project. **H. D. Causey** will be plant manager, when by next Spring it is expected to be producing 50,000 annual tons.

* * *

Construction work has been started on a 400-tons-per-day 100-percent sulphuric acid unit at **Monsanto Chemical Company's** William G. Krummrich plant at Monsanto, announces Vice President **J. L. Christian,** general manager of the company's Inorganic Chemicals Division. The new unit, expected to be in production Jan. 1, 1955, will supplement existing facilities. The unit will be a Leonard-Monsanto contact sulfuric acid plant.

* * *

Marquiss Farm Supply Co., Clinton, are building a plant for dry mixing and the handling of liquid fertilizer. This is an addition to their present plant. **Charles Marquiss** is proprietor of the 5-year-old business.

* * *

Stanford Anhydrous Ammonia Co., Stanford has been chartered with **William H. Witham,** president; **John W. Geske,** vice-president; **H. M. Frank,** secretary-treasurer.

INDIANA

Indiana Farm Bureau Cooperative Association has signed construction contracts for the $500,000 plant

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★ ONE MAN BATCH WEIGH SYSTEMS

★ PLANT MODERNIZATION PROGRAMS

★ CONTINUOUS AMMONIATION UNITS

★ MIXING AND SHIPPING EQUIPMENT

Aerating Equipment
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Continuous Acidulating Processes
Continuous Ammoniating Systems
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Dry-Mixing Units
Dust-Arresting Equipment
Fume Scrubbing Systems
Hoppers and Spouts
Materials Handling Equipment
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Multiple Hopper Batching Systems
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Plant Mechanization Systems
Pneumatically-Operated Gravity Batch Mixers
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BALTIMORE 24, MARYLAND

WHAT GOES ON . . . OR WHO'S ZOO?

Some months ago we had an item about a City Council somewhere in the South that voted $3500 to buy an elephant from a fertilizer concern there. We tried to find out what the concern was doing with an elephant, of all things, but failed.

Now comes another of the same, this time in New York, where North Atlantic Fertilizer and Chemical has a white elephant (and they mean a real live one, not a surplus of mixed goods) which they hope Ringling or someone will buy. It seems, the head man of North Atlantic, Fred J. Zeehandelaar, explains, city zoos want natural color elephants, while Ringling has not had an albino elephant for about 20 years.

We hope the creature does not wind up substituting for tankage!

annex at Indianapolis. If the process to be employed there proves successful, similar annex plants may be built later at Jeffersonville, Columbia City and Schererville.

* * *

Running well ahead of schedule, **Shea Chemical Corporation's** new phosphoric acid plant at Jeffersonville came into production last month. Company officials have already test-run the plant at a rate equivalent to an 80,000-ton annual production.

IOWA

Imperial Chemical, Shenandoah pesticide concern, have extended their plant to house a butyl ester sterification plant for the production of 2, 4-D and 2, 4, 5-T formulae, according to word from **William Ramsay** and **G. E. Zackert,** proprietors.

* * *

Boone Fertilizer's plant at Boone opened the first of last month. It is operated by **Harry** and **Norman Sturtz.**

* * *

Geigy are building a $500,000 formulating plant and sales office at Des Moines where they will produce insecticides and which will replace, office-wise, their present midwest territorial headquarters at Burlington and Lockridge.

KANSAS

Kansas' big **Cooperative Farm Chemicals Association** nitrogen plant at Lawrence is to be formally dedicated with a barbecue and all the fixings—and a gift of four ounces of ammonium nitrate to each visitor—August 31.

Fairview Fertilizer Co. Inc., Fairview, has been chartered with $12,000 capitalization. Resident agent is **Leslie W. Wikle.**

* * *

Blue Valley Fertilizer Company, Inc. has been chartered with $100,000 capital. **Wendell Glaspey** is resident agent.

* * *

Wichita Fertilizer Co., Wichita, had thieves break into their office, bodily remove the safe which was later found in a field, battered and minus the $98 in cash it contained.

LOUISIANA

American Cyanamid, with their $50,000,000 plant at Fortier in production on sulphuric, oxygen and ammonium sulfate, are now pressing for completion soon of the anhydrous and acrylontrile facilities.

MINNESOTA

Northwest Coop Mills have awarded contract to **Muskogee Iron Works** for the building construction connected with their superphosphate project at Winona, which includes acidulation and granulation equipment and additional bulk storage space. The project is under the direction of **Milo Dahl,** secretary to the board of Northwest, and production manager of **Midland Cooperatives, Inc.,** which has an interest in Northwest.

* * *

Minnesota Liquid Fertilizer has opened a branch liquid fertilizer operation at Hutchinson, with a 32,000 gallon tank. In making the announcement locally they had in mind the avoidance of neighbor

NEW AMMONIATING AND GRANULATING PROCESS

This new TVA Sackett-Built continuous process produces high-analysis granular mixed fertilizers from lower cost raw materials. The finished product need be stored only 48 hours before packaging. Eliminates "caking" in the bag. This process is presently being offered in 10, 15 and 20 tons per hour capacities. Can be incorporated into new or existing buildings. We also do the required engineering, installation and supervision of initial production if owner desires.

Superphosphate and mixed goods producers are invited to get our seasoned counsel on their expansion and modernization programs. It is available at no cost.

SACKETT BALTIMORE

America's Foremost Designers and Builders..

SUPERPHOSPHATE PLANTS · FERTILIZER MIXING PLANTS

RELATED PRODUCTION EQUIPMENT

THE A. J. SACKETT & SONS CO.,
1727 S. HIGHLAND AVENUE, BALTIMORE 24, MD.

Architects and Manufacturing Engineers to the Fertilizer Industry since 1897

trouble. The announcement said the plant would emit no odors "unless there is a break" in which case there might be a "non-offensive ammonia smell . . ." the fertilizer is not flammable".

MISSOURI

Hercules Powder whose leasing of the **Missouri Ordnance Works** at Louisiana, Mo. we reported in June, has already begun production, and is now considering broadening the line of chemicals to be produced there. The first car was delivered early last month.

NEW MEXICO

National Farmers Union's business manager, expresses full confidence that their projected $14,000,000 plant at Carlsbad will soon become tangible. The exploratory drilling has now definited the body of potash, and is now continuing to choose the most desirable mine sites.

NEW YORK

Saratoga Farm Chemicals, Inc., Saratoga Springs, has upped its capital stock from $20,000 to $50,000.

NORTH CAROLINA

Smith Douglass have set up seven scholarships to a total of $4900 at the **N. C. State College School of Agriculture.**

OHIO

Standard Oil is making a market study that may lead to the establishment of a nitrogen plant somewhere in Ohio.

PENNSYLVANIA

U. S. Steel, it is forecast around Pittsburgh and in the cities most directly concerned, is on the verge of going into a new field—the production of anhydrous ammonia at Gary, Indiana and at Geneva, Utah, major by-product coke oven gas centers and closest to the big consuming farm markets of the several U. S. Steel by-product coke facilities.

TENNESSEE

The **Tennessee Valley Authority** July 19 offered for sale the experimental plant at Godwin, near Columbia, Tenn., producing fused tricalcium phosphate.

T. V. A. previously had said that work on the new fertilizer would end "chiefly because objectives originally set for the project have been reached."

The sale will be made to the highest bidder at public auction, to be held within thirty to sixty days after T. V. A. receives an offer to purchase "in an amount sufficient in T. V. A.'s judgment to constitute an acceptable minimum price".

There are two fused-rock furnaces in the plant, and the site is on 406 acres.

T. V. A. said it would "continue its prospecting and mining programs in the Tennessee phosphate fields to support its phosphate fertilizer and munitions development" at its Wilson Dam, Ala., research center.

The plant being closed down, the 120 employees have been placed in other TVA work.

TEXAS

Mathieson's agricultural chemical division has made available to the **University of Houston** 160 acres of land as a demonstration farm, it has been announced by Mathieson president, **S. L. Nevins.** The land will become a clinic for training students in agriculture, profits—if any—to be converted into working scholarships. The tract is adjacent to the Mathieson plant at Pasadena, is convenient to the University and is leased to the University for $1 a year.

* * *

Chillicothe Petrochemicals, Inc., Chillicothe, has been chartered "to manufacture and market high nitrogen fertilizers", formed by members of the Chillicothe Agricultural and Industrial Foundation, a group with the technical skill and experience necessary to operate the plant, according to **Dr. R. E. Sitta** president. **Arkley Bell,** First National Bank president is secretary treasurer.

* * *

Quality Fertilizer Company, Chillicothe, headed by **Arkley Bell** and **Jack McMichael** is erecting a 30,000 gallon tank for anhydrous ammonia.

* * *

Hereford is buzzing with talk of a $10,000,000 fertilizer plant. Upon assurances of construction they are ready to furnish a 100-acre tract of land to be purchased by local donors. **Henry Brandon** of Houston is reported as working on the promotional stages of the project.

UTAH

Calunite Corp. is nearly ready with its $175,000 mill at Marysville for the conversion of alunite into "low-cost, high yield" fertilizer.

Miss Dixie-Pixie comes to life in this picture, posed by the daughter of the superintendent of the Dixie Guano Company, Laurinburg, N. C. She is dressed in a costume exactly like the pixie featured in the brand design for their lawn and garden fertilizer. Her debut was made at an annual dealers banquet held by the company, when she graced this display of bagged Dixie-Pixie fertilizers.

WEST VIRGINIA

Columbia - Southern Chemical Corporation's ammonia operation at Natrium is under construction. Design and construction of the new facility are under the supervision of the **Chemical Construction Company.**

According to **E. T. Asplundh,** president of Columbia-Southern, the new plant is expected to be in production by April 1955. Estimated cost of the new facility is $3,000,000.

The compressors for the new manufacturing unit will be housed in a pre-cast concrete building and the ammonia producing facility will be out-side construction. This plant will mark Columbia-Southern's entry into the ammonia production field.

By-product hydrogen, produced at Natrium, will be utilized in ammonia production.

The Natrium location was selected due to the availability of hydrogen supply and because industrial and agricultural outlets can be readily serviced from the West Virginia facility.

* * *

Westvaco division of Food Machinery and Chemical Corporation has authorized an anydrous ammonia facility at South Charleston with a capacity of 60 daily tons, to be completed in late 1955.

AUSTRALIA

Simon-Carves Pty. Ltd. are nearing completion of three large roasters at Port Adelaide. The roasters, to be used in the production of sulphuric acid, are part of a $5,000,000 acid plant scheduled for completion early next year.

AUSTRIA

Chemical Research Institute, Vienna, which has been experimenting, via a pilot plant since 1952, on the production of sulphuric acid from gypsum has found it expensive to do, but has established a plant for the purpose because cement turns up as a by-product and that product is urgently needed in Austria.

DENMARK

Dano, Copenhagen, have the order for the heavy equipment for the garbage-fertilizer plant, the second to be established in Quito, Ecuador, as previously reported here, and which will handle 24 daily tons of waste. It should be in operation by early next year.

INDIA

Chemical Construction Co. are competing with three foreign firms for the projected urea and ammonium nitrate plant at Sindri which is expected to produce 150 tons of ammonium nitrate and 35 of urea, fertilizer grade.

* * *

The giant Sindhri fertilizer plant —intended to make India self-sufficient and enable it to export—is not even producing enough to meet the country's needs, says Agricultural Minister M. Bhaktavatsalam.

He told a news conference "the promised quota of ammonium sulphate cannot be met by Sindhri," adding that imports would have to be made either from Japan or America.

The minister refused to disclose the reason for under production but said "a Government of India official hastened to investigate it."

The Sindhri plant—the biggest fertilizer plant in Asia, with a capacity to produce 350,000 tons annually—went into production in January, 1952.

MEXICO

Mexican Gulf Sulphur, San Cristobal, has completed its $6,000,000 plant there and made its first shipment. **Paul Nachtman,** president, says the shipment was the first ever produced outside the U. S. by the Frasch process. Engineered to produce 200,000 annual tons, it can be boosted readily and economically to 500,000 as needed.

* * *

Texas International Sulphur has undertaken additional financing to handle exploration and development in the Tehuantepec area.

TURKEY

The **Kutahya** nitrogen plant, proposed by the **Turkish State Enterprises** and which is expected to cost $21,400,000 of Turkish and foreign capital is out for bids now. Two each of American, French, German and Italian concerns have been asked to submit proposals.

OBITUARIES

Horace Bowker, 77, retired chairman of American Agricultural Chemical's executive committee, May 25 at his home in Lawrence, Long Island.

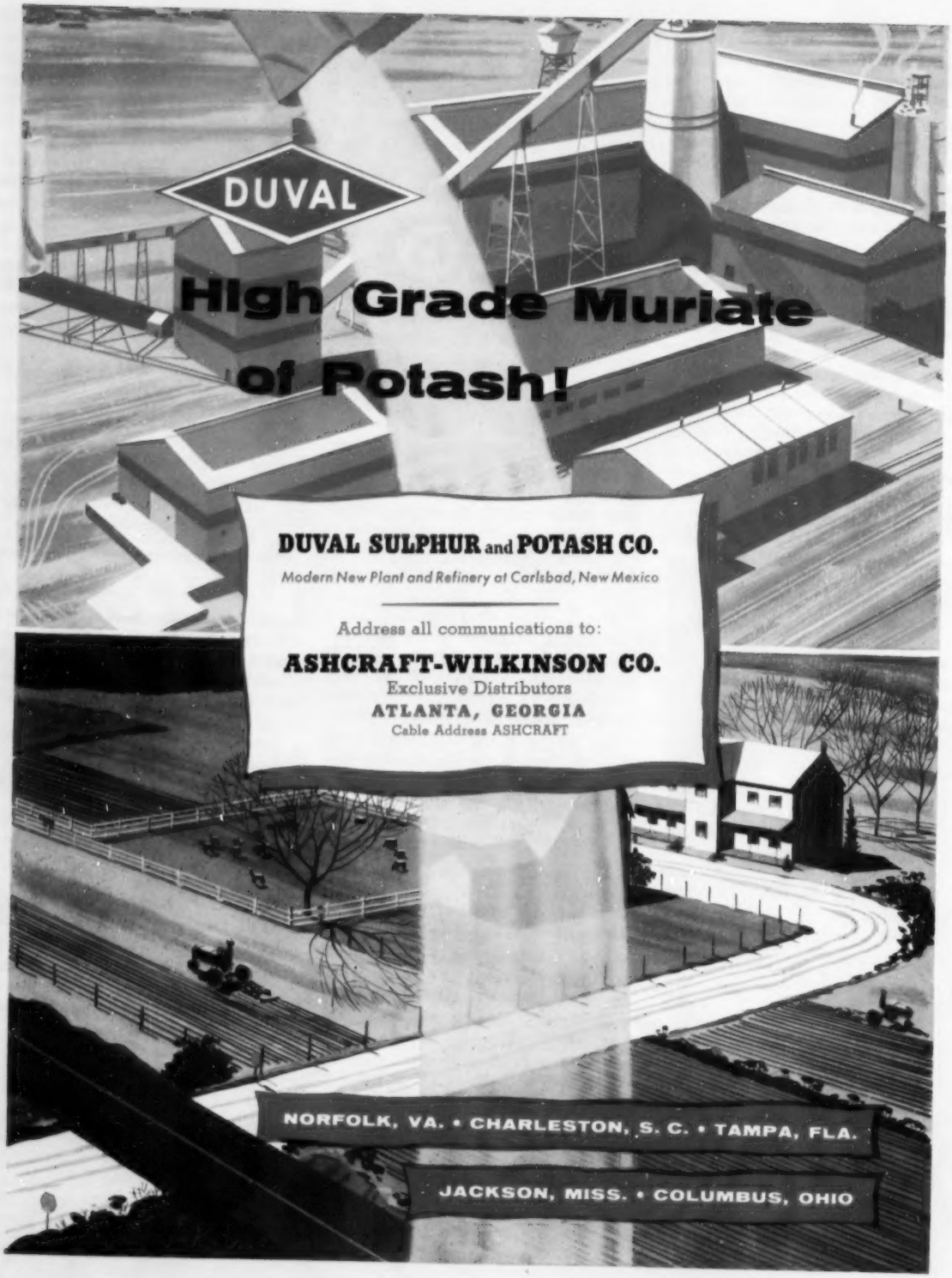
Franklin Pierce Clay, 75, died July 23 at his home. He was associated with the Virginia-Carolina Chemical Company.

Sam Paul Jones, 56, factory superintendent Home Guano Company, Mullins, S. C., of a heart attack, May 20.

Howard F. Kimble, 59, formerly with Smith Agricultural Chemical, died May 20 in Columbus, Ohio.

G. Dwight Scarseth, son of George Scarseth, director of the American Farm Research Association, died June 26 of accidental injuries.

Arkell and Smiths, manufacturers of multiwall, coffee, and specialty bags, has just acquired its fourth bag-making plant Located at Hudson Falls, N. Y., this plant was formerly owned by Union Bag & Paper Corporation, which will continue to act as a selling agent, under an agreement which became effective July 1.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INGENUITY

FULTON MAKES YOUR STYLE MULTIWALL PAPER BAGS

The men who operate the intricate machines that make Fulton Multiwalls have had years of experience in manufacturing paper bags. Their skill and watchfulness is shown in the uniform high quality and functional designs of all Multiwall Paper Bags. Whatever your Multiwall requirements are—try Fulton on your next order. Speedy, coast-to-coast delivery from our plants in St. Louis, New Orleans and Los Angeles.

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BAG & COTTON MILLS

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SAVANNAH

Personals . . .

James C. Totman, assistant treasurer and manager of **Summers Fertilizer's** Bangor Maine, office, was one of the successful candidates in Maine's recent primary election. He was running on the Republican ticket for reelection to his third term in the Maine State Legislature. Jim is also a candidate for Republican Floor Leader in the House.

* * *

George T. Harley, for 10 years manager of **International Minerals & Chemical's** potash mines at Carlsbad, New Mexico, retired on July 1 under the regular retirement policy of the company, according to an announcement by **A. Norman Into,** vice president in charge of the company's Potash Division.

Carl Arend succeeded Mr. Harley as active manager of the installation in January of this year and since that time Mr. Harley has served as special consultant and advisor for the operation.

Mr. Harley, who has long been known in the Carlsbad area for his active participation in community and educational affairs, plans to engage in private practice as a geological and mining consultant.

* * *

James A. Wilson, former manager of **International Minerals & Chemical's** Bonnie, Florida, plant, has been promoted to the position of production manager for the Phosphate Chemicals Division, **Howard F. Roderick,** vice president in charge of that division, has announced.

Neil O'Donnell, who has been acting superintendent of the Bonnie plant for several months, becomes plant superintendent.

In his new position Mr. Wilson not only will be responsible for the Bonnie plant but also for International's chemical plants at Wales, Tennessee, and at Tupelo, Mississippi.

At the same time, Mr. Roderick announced that **Leonard W. Gopp** has joined the Phosphate Chemicals Division as special products sales manager, in which capacity he will be directly responsible to Mr. Roderick for sales of triple superphosphate produced at Bonnie.

* * *

T. P. Turchan, Niagara plant manager of **North American Cyanamid Ltd.** since 1952, has been appointed manager of manufacturing for the agricultural chemicals division of **American Cyanamid Co.**

D. McC. Collette, assistant manager of the Welland plant, was named manager of the Niagara plant.

* * *

W. Grant Kilbourne, vice president of **J. R. Simplot** has been made general manager of the fertilizer division, directing production, mining, sales and distribution from Pocatello headquarters.

* * *

Richard A. Brown has been elected president of **The Dickerson Company, Inc.**

* * *

D. A. Williams, president of the **Central Farmers Fertilizer Company,** Chicago, and manager of the **Minnesota Farm Bureau Service,** was elected to be vice-president of the Kansas **Cooperative Farm Chemicals Association** at a recent board meeting. **Howard Cowden** was re-elected president; M. R. Miller is secretary-treasurer.

* * *

As we reported in June, **Central Farmers Fertilizer** has bought $2,000,000 in common shares of **Cooperative Farm Chemicals** and will distribute around 25% of the output of the plant at Lawrence, Kansas, which is to be formally dedicated August 31.

* * *

Charles M. Shinn, general manager and secretary of the **Growers Fertilizer Cooperative** Lake Alfred, Florida, has resigned his position because of prolonged illness. Mr. Shinn, who held the position for 20 years, said he had no immediate plans for the future. **Paul N. Simmons,** former assistant general manager, has been appointed to the post and will also act as secretary of the firm.

* * *

Dean G. Abercrombie is now managing the Buffalo, N. Y. office of the **St. Regis Paper Company** multiwall packaging division and handling multiwall bag sales in western New York State. He joined St. Regis in 1948.

In his new post, Mr. Abercrombie succeeds **Kenneth L. Moore,** who is no longer with the company.

* * *

E. J. Christman, port Director made the following announcements: effective immediately **Howard Neely** had been promoted from terminal superintendent to assistant port director in charge of port operations including the cotton compress and phosphate grinding plant which is now under construction at the **Port of Lake Charles.**

Peter C. Crolius who has joined the NFA staff as editorial assistant, working with Delbert L. Rucker, NFA's director of information.

William E. McGuirk, Jr., who has been appointed executive vice-president of Davison Chemical Company Division of W. R. Grace & Co. He was formerly vice-president of Grace.

John H. Groh, who had been serving the port as traffic manager, has been made assistant port director in charge of traffic and solicitation.

A port expansion program is now in progress under which additional facilities will be constructed during the next three years by virtue of the $6,000,000.00 bond issue which was recently voted.

* * *

Trevor Steele, Pacific Northwest regional agronomist for **American Potash & Chemical Corporation,** has moved his headquarters from Des Moines, Washington, to Salem, Oregon. The new location is at 350 Hansen Avenue in Salem.

The change was made to obtain a more centralized location from which to service the Pacific Northwest agricultural trade.

* * *

The Plant Food Division of **International Minerals & Chemical Corporation** announces the following personnel changes effective July 1, 1954: **Sam B. Broyles** promoted from sales representative to district sales manager at Greeneville, Tennessee, to succeed **J. Hampton Hyder,** retired.

John M. Maschoff promoted to district credit manager at Tupelo, Mississippi, to succeed **W. B. Green,** retired.

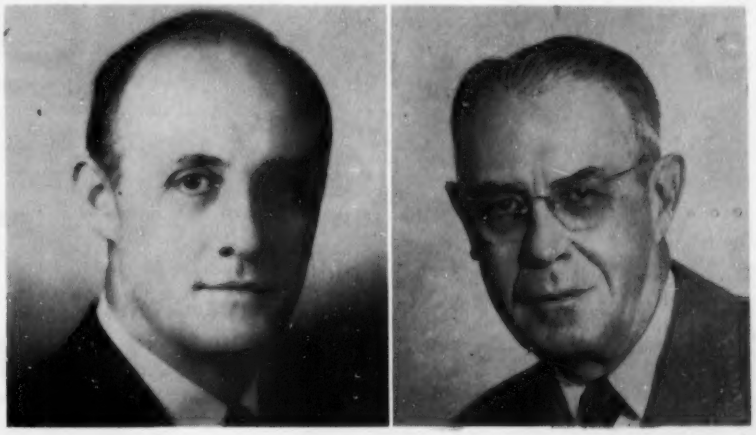
P. Lewis Webb promoted to superintendent of Hartsville, South Carolina, plant to succeed **I. R. Timmons,** retired.

Harold J. Klee who has been appointed manager of the newly-organized central sales division, Stauffer Chemical Company, with district sales offices in Chicago and Houston. Mr. Klee was formerly manager of the Chicago sales district and will continue to make his headquarters in Chicago. J. H. Begley, formerly assistant manager, has been appointed Manager of the Chicago sales district.

Their Savannah friends and others held a dinner for these two on their retirement. They are, left, Paul Reynolds, Swift & Co. plant food division and Jim Baggs, Virginia-Carolina. The party was held last month. Jim is the veteran with 44 years in the industry, while Paul followered him 2 years later. V-C has announced Paul Renfroe as Jim's successor; W. U. Bremer will move into the post at Swift & Co. At the retirement party the toastmaster was Jim Henderson manager for H. J. Baker & Bro.

The Chas. H. Lilly Co., Seattle, Washington has appointed Jack McConkey, right, as general sales manager. Art Burkette, left, has been appointed manager of their Ellensburg, Washington, branch.

Howard L. Bayne, right has announced his retirement as manager of the Kansas City plant and sales division of Bemis Bro. Bag Company, effective August 31. He will be succeeded as manager by L. E. Cox, now assistant manager. Mr. Bayne joined the organization in 1912. Mr. Cox in 1933.



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MULTI-WALL BAGS

FOR PROMPT SERVICE FROM

THREE STRATEGICALLY LOCATED PLANTS

Open Mouth Pasted Bottom

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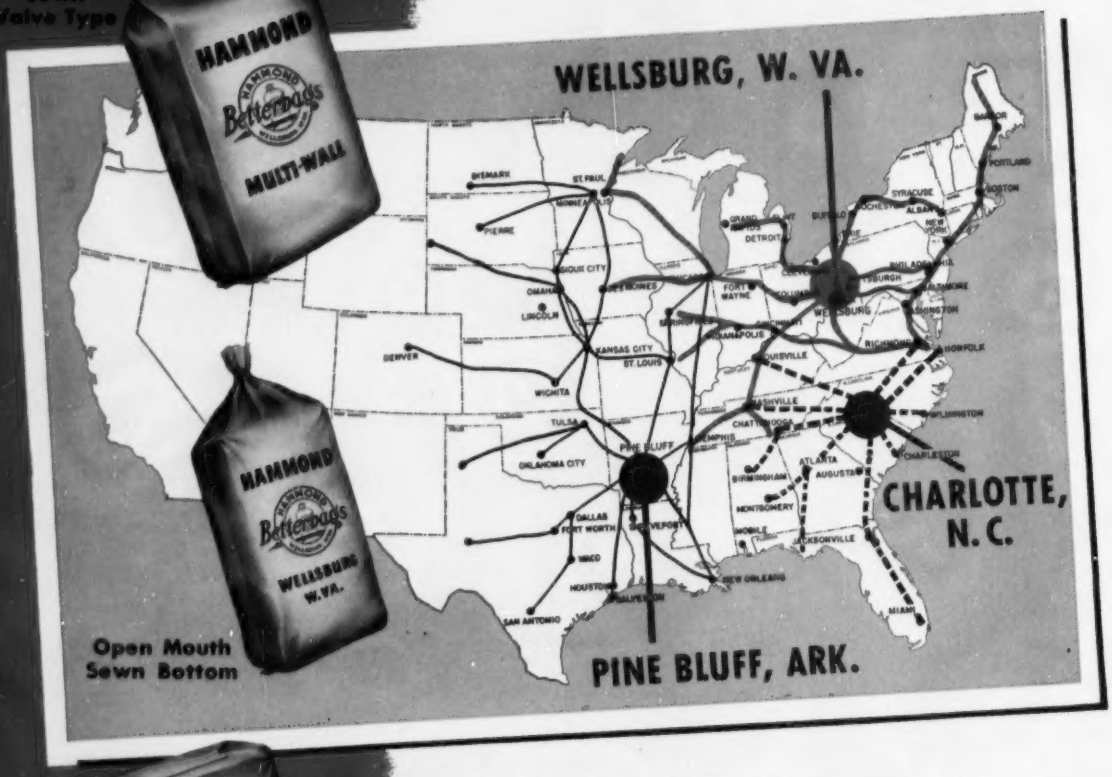

Open Mouth Sewn Bottom

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When it's needed most experience pays off! **Tennessee Corporation's** years of research and experience in the fertilizer field can keep you a step ahead of progress. As chemists and experienced producers, we have pioneered in the use of **SUL-FON-ATES** in fertilizer manufacture, from a technical angle. We can conduct controlled plant tests for you — helping you acquire the exacting "know how" required in the fertilizer business. Let us send an experienced technician to work with you and give you an adequate understanding of **Tennessee's SUL-FON-ATE**—how it can best serve you.

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TENNESSEE TC CORPORATION

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James K. O'Cain succeeds his father, **J. P. O'Cain** as superintendent of Mulberry, Florida, plant.

Robert L. Wright promoted from district credit manager to district sales manager at Cincinnati, Ohio, replacing **Jack K. Lindsey** who is being transferred to the potash division as district sales manager at Shreveport, Louisiana, replacing the late **Henry C. Aaron. John E. Meister,** formerly sales representative, is promoted to district credit manager at Cincinnati.

* * *

Warren Lewis, who has faithfully served **Longview Lime Corporation,** Birmingham, Ala., for the past twenty-one years, has asked to be relieved of his duties as President. His request has been granted, but with the understanding that he will remain as a stockholder, director and assistant to the chairman. **Malone Moore,** who has been vice president and treasurer, is now president. Mr. Moore has served the company for fourteen years. **Robert Weatherly,** formerly an executive in the sales division of **Monsanto** will engage in sales organization and promotional activities. **Robert D. Rae,** who has been in the Longview sales organization for fifteen years, is now located in the home office. He will be active in the overall sales activities of the company.

* * *

Douglas W. Laird has been appointed assistant manager of the purchasing department of the **Virginia-Carolina Chemical Corporation** succeeding **D. M. Low,** who retired July 1 after 50 years of service.

* * *

Hugh W. Sloan, vice president of **St. Regis Paper Company (Canada) Limited,** has been appointed to direct the company's operations. In this responsibility Mr. Sloan succeeds **Thomas H. Cosford,** who was managing director of the Canadian company until his retirement this month. Mr. Cosford continues as a director of St. Regis Paper Company, of which the Canadian company is a subsidiary, and will be available in a consulting capacity.

* * *

Executives and personnel of **Fulton Bag & Cotton Mills** gathered recently at a testimonial luncheon in St. Louis to honor **J. B. Cronheim** on the occasion of his 55th anniversary with the company. Mr. Cronheim is vice president and a member of the board of directors of Fulton, as well as general manager of the company's St. Louis plant. Those attending the luncheon included: Mr. Cronheim; **A. W. (Gus) Moenkhaus,** sales supervisor; **Walter Hallerberg; Arthur C. Jones,** assistant manager, and **Elmer F. Walthers,** all of St. Louis. **E. Monroe Hornsby,** manager, New York; **Allen Woodruff,** production manager, St. Louis; **Eugene Revelle,** Manager, Denver; **Norman Elsas,** chairman of the board, Atlanta; **Henry Meyerhoff,** manager, Kansas City; **Richard Cronheim,** son of J. B. Cronheim, St. Louis; **Al Reinberg,** Assistant Manager, Kansas City; **Edgar F. Groppe,** St. Louis; **August Dunk** manager, Minneapolis; **J. F. Ryan,** sales manager multiwall paper bag division, St. Louis; **E. A. Cronheim,** vice president & secretary, Atlanta; **Arthur Sand, Philip Barnet, George Ferber, Rodger Shultz,** office manager, and **R. E. Obermiller,** all of St. Louis.

Directors of Smith-Douglass Company, Inc. announced the appointment of W. B. Copeland pictured above as executive vice-president of the firm, a newly created position, after their quarterly meeting held in Norfolk in July. Mr. Copeland has been a vice-president of the Company since October, 1948.

S. L. Lott, controller and assistant treasurer, at the same time was named treasurer of the company by the directors. Previously, Ralph B. Douglass, president of the firm, also held the post of treasurer.

* * *

R. R. Zurbuchen former director of manufacturing for **Consumers Cooperative Association** has been named general manager of **Cooperative Farm Chemicals Association,** the subsidiary corporation that is building the $18 million nitrogen fertilizer plant in Lawrence.

For a number of years he has been CCA's representative on the board of the **Central Farmers Fertilizer Company** Chicago, the federation of 16 regional cooperatives, which recently acquired a fourth interest in Cooperative Farm Chemicals Association.

* * *

Tracy Cunningham, retired from **Armour Fertilizer** earlier this year, is currently enjoying a Mediterranean and European tour. His itinerary includes Crete, Spain, Greece, Italy, Egypt, Palestine, Lebanon, Turkey, France, Holland, England, Switzerland and part of Germany. He sailed early this summer on the S. S. Excambion, and is expected to return in September.

The Cotton Producers Assn. mixing plant Athens, Ga., was on overtime night work, bagging to fill a line of empty trucks, when we snapped this picture of Mr. and Mrs. H. Grady Parr. Grady has been at the plant, where he is superintendent, for 34 years while management has changed from International Agricultural Chemicals to Rowe Warehouse and Fertilizer Company to Cotton Producers Assn. Mrs. Parr has been helping out in the office for the past ten years. Grady is a native of Athens, having lived in the same house all his life until four years ago when it was razed to make way for a new shopping center. When there's a free hour or two, the Parrs are likely to be found together fishing somewhere. They are twice grandparents. One of their daughters is married to a forestry superintendent at Hinesville, Ga., and has a daughter. Their other daughter is married to a football coach at Fort Lauderdale, Fla., and has a son. The Parrs find their primary recreation is a visit from either of the grandchildren.

Fulton Bag and Monsanto Explore New Cotton Treatment

An agreement to investigate the cyancethylation of cotton fabric and its uses has been entered into by the Institute of Textile Technology, Fulton Bag and Cotton Mills and Monsanto Chemical Company, it was announced today by Norman Elsas, Chairman of the Board at Fulton.

He stated further that the new treatment will give cotton a considerably greater advantage over fibers such as nylon, dacron, orlon, glass, rayon and others, in that none of these fibers can meet cotton in all its properties.

The new treatment which was developed at the Institute of Textile Technology, one of the major research institutions of the country, is expected to result in a vast improvement of cotton fabric in its resistance to heat, flammability, mildew and rotting, acceptance of dyes and resistance to abrasion. It will also prepare the fabric for improved results from the many treatments such as waterproofing and resistance to wrinkling which are now applied to cotton cloth, and it may increase its market in automobile tires and related fields.

Patents have been applied for by Dr. Jack Compton, technical director of the Institute and inventor of the process.

Fulton Bag and Cotton Mills was one of the founder companies of the Institute of Textile Technology, and company executives stated they are particularly gratified to have a share in jointly working on this process with the Monsanto Chemical Company and the Institute.

International's Bagpak Has New Iowa Office

The Bagpak division of International Paper Company is opening a new sales office in DesMoines, Iowa, it was announced by R. I. LaMarche, Sales Manager.

The new office will be responsible for parts of Iowa, South Dakota and Missouri. Dale Rowe will head the new office.

C & I Acquires Stengel Process Rights

The Chemical And Industrial Corporation, Cincinnati, Ohio, has recently acquired the right from Commerical Solvents Corporation to license to users the new Stengel Process for the production of ammonium nitrate. This process makes it possible to produce granular ammonium nitrate in almost a single step from nitric acid and ammonia. In addition, the Stengel Process will produce ammonium nitrate solutions with any desired strength or a dry, molten salt. Chemical and Industrial Corporation is prepared to design and erect plants of any size using this process.

Hammond Moves Michigan Sales To Chicago

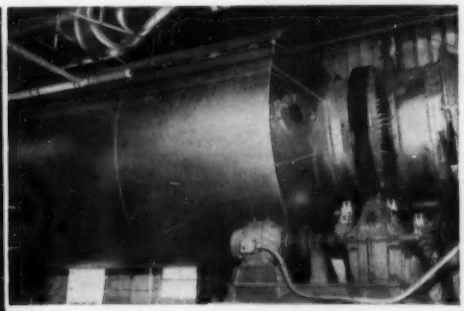
Effective July 12th, all sales activities for Hammond Bag and Paper Company in Michigan will be handled from Chicago, according to an announcement by M. E. Greiner, vice president. J. E. Cornell, Jr., and W. A. Sheets, who represent Hammond, will be located at 38 S. Dearborn Street. They will service accounts in Michigan and throughout their present territory.

New Phosphorous Test

A simple test developed at the Regional Phosphate Laboratory in Colorado by which farmers can check the phosphorous level in their soil is being adapted to California conditions by University of California soil researchers.

Chemicals are Dried Completely, Quickly, Economically in DehydrO-Mat*

* PAT. PENDING



BUILT IN A WIDE RANGE OF CAPACITIES, the DehydrO-Mat, though comparable in price, out-performs conventional dryers of similar size. Compact . . . easy to install in a minimum of space.

The DehydrO-Mat will not scorch or burn even the most sensitive chemicals. Air, not inclination, moves the material . . . quickly through the hot zone, slowly through the temperate zone. Since no boiler is necessary, the DehydrO-Mat can be in full operation from a cold start within ten minutes. DehydrO-Mats utilizing steam-heated air are also available.

Consult the Renneburg Engineers on all your drying problems. FREE literature and information on request.

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Experienced inspectors carefully examine newly tubed bags before they move on to sewing machines. Careful inspections after every step in the production of V-C Multiwall Bags mean a better package for your product.

V-C representative discusses customer's new printing plate with V-C engraver. Bag Division representatives work closely with top production personnel to make sure rigid specifications are carefully followed.

Part of a battery of heavy rollers which super-seal pasted bags. Carefully applied fast-drying glue and eight minutes of constant, heavy pressure from these rollers securely bond the surfaces of all pasted V-C bags.

V-C Multiwall Bags are made by people who understand the importance of careful construction. It's this extra care in construction that makes V-C multiwalls better for your product. Extra care plus modern bag-making methods, materials and machinery give V-C multiwalls the ability to stand rough treatment while your product is being shipped or stored. Without cost or obligation, ask for full details about better-built V-C Multiwall Bags.

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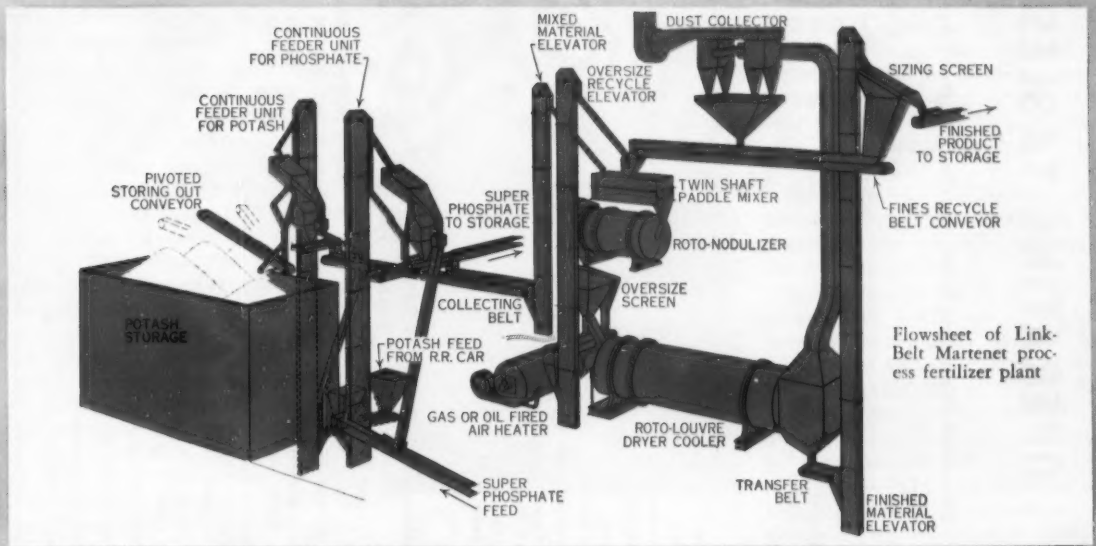

Flowsheet of Link-Belt Martenet process fertilizer plant

Here are the outstanding advantages of this process

1. USES PRESENT FACILITIES. Many of the present facilities in your plant can be converted.

2. LOW COST INSTALLATION. Initial capital investment is less than with other methods for producing high-analysis fertilizer.

3. RAW MATERIALS. The Martenet process uses as its sole source of nitrogen such high grade materials as anhydrous ammonia and ammonium nitrate solution.

4. LOW OPERATING COSTS. This automatically controlled process reduces plant manpower to a minimum, keeps power and fuel costs reasonable.

5. VERSATILE. The process will produce all ratios in a very high degree of plant food concentration.

6. GRANULAR—HOMOGENEOUS PRODUCT. The finished product is granular, homogeneous and free-flowing—can be stored for indefinite periods in bulk or bags without fear of cementing particles.

The ability to supply a complete "Martenet Process" installation is another example of the unique "turnkey" service Link-Belt offers you. Link-Belt experience includes dry-mix, superphosphate, nitrophosphate, ammonium nitrate, ammonium sulphate, urea, granulation and other plants.

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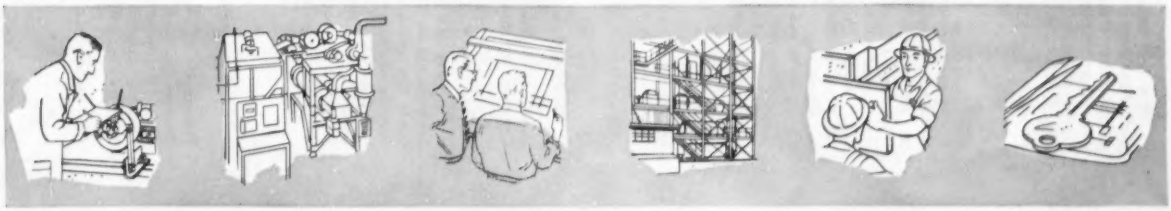


MARTENET PROCESS OPERATING TABLES

In last month's issue we carried—in full—a description of the Link-Belt-Martenet process presented to the Granulation Forum at NFA's summer convention by W. W. Coffin, manager of Link Belt's Fertilizer Processing Department. Responding to keen reader interest, we are reproducing these charts which—in the form of film slide projections—accompanied Mr. Coffin's talk at the meeting.

TABLE I
Assumptions For Estimates

1) Plant Location	Middle West
2) Plant Capacities	50,000, 100,000, 150,000 tons per year
3) Market Area (depending on location)	
Small plant	120 Miles Radius
Medium plant	250 Miles Radius
Large Plant	350 Miles Radius
4) Costs of Raw Materials	See Basic Assumptions
5) Operating Time	
Shifts per day	3
Days per week	6
6) Allowance for Losses in Process and for Overage in Grade %	
N	1
P^2O^5	1
K^2O	2
7) Storage Capacity—Per cent of Annual Production	
Annual Production	40

TABLE II
Estimate Cost of Raw Materials For Production of Mixed Fertilizer

Grade of Product 12-12-12
Capacity of Plant (tons/year) 50,000 100,000 150,000

RAW MATERIAL	COST/TON	COST OF RAW MATERIALS $/TON OF PRODUCT
Superphosphate (22.5%)	$23.20	$10.21
Triple Superphosphate (46%)	58.40	2.72
Muriate of Potash (62%)	37.47	7.25
"C" Solution	52.25	16.98
Sulphuric Acid (100%)	24.00	1.66
Total Average cost per ton of product		38.82
Average cost per unit of plant food		1.08

TABLE III
Estimated Investment Costs For Process And Storage Plants

Process Plant:	$350,000.00*	$ 475,000.00*	$ 600,000.00*
Storage Building	500,000.00	750,000.00	1,000,000.00
Total Plant Investment	850,000.00	1,275,000.00	1,600,000.00
Working Capital	.....	.....	.....
Total Investment for Pricing	.....	.....	.....

* Figure includes process equipment estimated as follows:

50,000 ton per year plant	200,000.00
100,000 ton per year plant	275,000.00
150,000 ton per year plant	350,000.00

TABLE IV
Estimated Operating Costs For The Martenet System

Grade of Product: 12-12-12

	Operating Costs $/Ton of Product		
Capacity of Plant Tons/Year	50,000	100,000	150,000
1. Operating Labor	$ 1.78	$0.85	$0.60
2. Maintenance	1.32	0.66	0.44
3. Bags—11 cents each	2.75	2.75	2.75
4. Fuel Oil at $105/gal.	.54	.54	.54
5. Power	.57	.57	.57
6. Water	.01	.01	.01
7. Analyses	.45	.45	.45
8. Supplies	.01	.01	.01
9. Depreciation	1.00	.61	.52
10. Property tax	.17	.13	.11
11. Insurance	.17	.13	.11
12. Plant Overhead	.73	.37	.25
13. Bagging and unloading	1.25	1.25	1.25
Total Operating Cost per ton of Bagged Product	$10.75	$8.33	$7.61
Total Operating Cost per unit of Plant Food	0.30	0.23	0.21

TABLE V
Estimated Delivered Wholesale Price For Bagged Martenet Process Fertilizer

Grade of Product 12-12-12

	Dollars Per Ton of Bagged Product		
Capacity of Plant Tons/Yr.	50,000	100,000	150,000
Cost of Raw Material	$38.82	$38.82	$38.82
Operating Costs	10.75	8.33	7.61
Total Production Cost	49.57	47.15	46.43
Total Production Cost (Per unit of plant food)	1.38	1.31	1.29
Freight for delivery of product	5.00	5.00	5.00
Wholesale Price	54.57	52.15	51.43
To which may be added:			
* Feder. Income Tax	.....	.....	.....
* Return on Investment	.....	.....	.....
* Sales & Administrative Expense	.....	.....	.....

* These rates are beyond the scope and should be individually computed based on current rate and expected return.

AMMONIA

Second Edition Out On Andrews Book

The daddy of anhydrous ammonia application has published the second edition of his book, "The Response of Crops and Soils to Fertilizers and Manures," after six printings and 39,000 copies of the first have been sold since 1947. The 1954 edition, which brings up to date the findings so ably covered in the first, and which supplies a new chapter on the nitrogen solutions, has just been announced by Dr. W. B. Andrews, State College, Mississippi.

When the first edition was written, anhydrous ammonia was just being demonstrated in Dr. Andrews immediate vicinity, and spreading fast. Since that time, many millions of dollars have been put into the production of nitrogenous solutions, and distribution and application mechanisms have multiplied with amazing speed.

Dr. Andrews' new chapter brings us up to date on the findings from this new technique and his whole book has been revised in the light of the added years of experience with it.

W. B. Andrews

Spencer Releases Ammonia Treatise

"Ammonia," a 50-page book on the technical aspects of handling, physical properties and allied topics, has just been released by Spencer Chemical Company for the benefit of industrial users.

The book, containing 47 halftones and drawings and 17 charts and graphs, is perhaps the most comprehensive of its type in the field. It is concerned with both anhydrous and aqua ammonia.

In detail it discusses uses (fertilizers, explosives, plastics and fibers, industrial chemicals, water treatment, refrigeration, metallurgy and pulp treatment), handling (flammability, storage equipment, unloading procedure, vaporizers and cylinders), safety (physiological effects and first aid), and properties.

The book takes 12 pages to chart vapor pressure, specific volume and density, thermal properties, solubility and integral heat of solution of anhydrous ammonia, and density and total vapor pressure of aqua ammonia. Although the book is strictly for technical use, it also contains background information on the history and uses of ammonia.

Anhydrous Conference In Wisconsin, August 18

Sponsored by the Soils Department, University of Wisconsin, the Great Lakes Region A.A.I., and the Agricultural Ammonia Institute, there will be a one-day farm symposium on anhydrous ammonia on the campus of the University of Wisconsin August 18. Dr. C. J. Chapman, chairman of the Madison Anhydrous Ammonia Conference has predicted attendance of over a thousand.

Several of the nations top agronomists will speak, and a trade show will be staged in conjunction with the meeting. The trade show will be at Memorial Union Building on the campus. Edgewater Hotel will be headquarters.

Anhydrous Use Grows 34%

Sales of anhydrous ammonia for direct application to the Nation's farm crops increased nearly 34 per cent during the first five months of 1954 as compared with the same period in 1953.

This trend in distribution of anhydrous ammonia is indicated in a survey made by the Agricultural Ammonia Institute.

In arriving at the 34 per cent increase, the AAI compiled reports from 15 distributors who do business in 20 of more than 40 states using agricultural ammonia. Their combined tonnage represented about 10 per cent of the nation's direct application sales in 1952-53.

Only one of the 15 reported a decrease for the January-May, 1954 period. This distributor cited an early spring drought as the reason for his decrease, and expressed confidence the loss would be overcome during the summer side-dressing period.

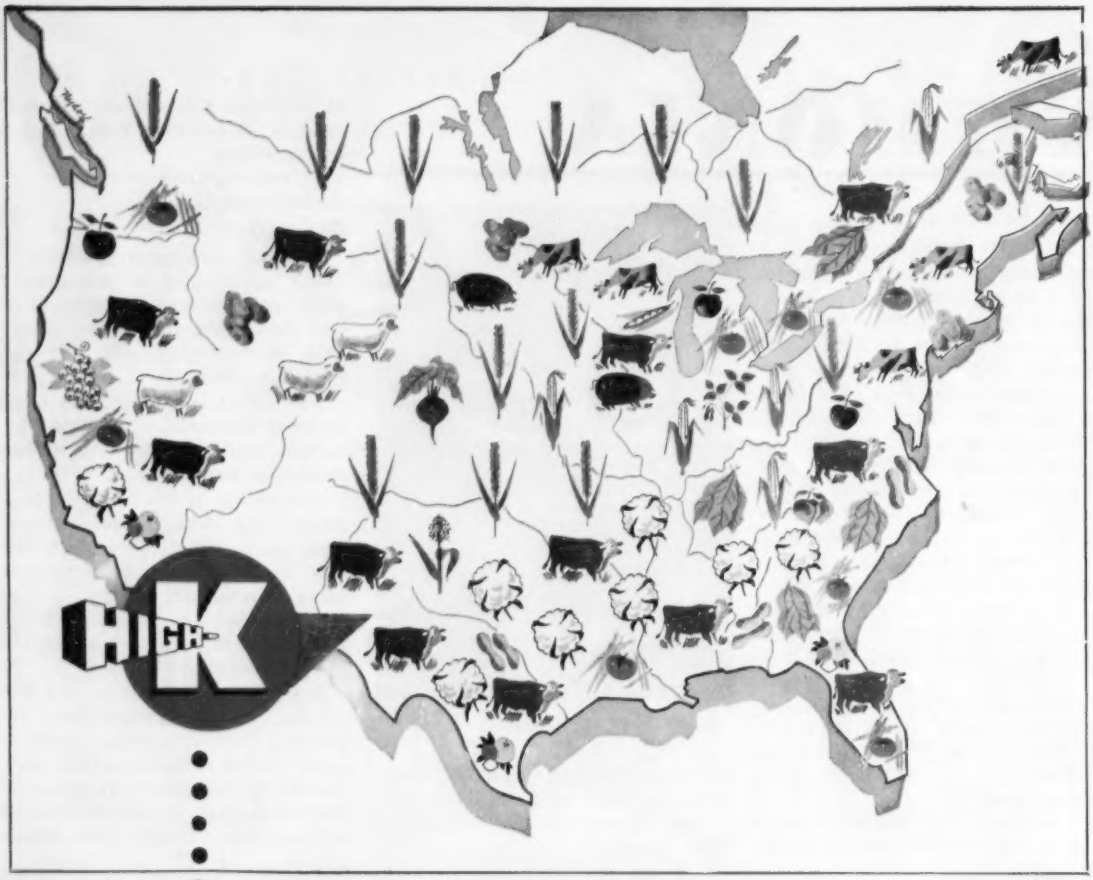
Ammonia sales increases were up as high as 800 per cent for one distributor. The largest dealer reporting handled 10,500 tons which was a 50 per cent increase.

At the time reports were made, the heavy application season for ammonia was in full swing or just beginning in the Great Lakes and Great Plains states—the current frontier for the agricultural ammonia industry.

In the 1953-54 fertilizer year it is estimated 40 per cent of the nations output of synthetic agricultural nitrogen was used in direct application.

Chances of the 1954-55 distribution of anhydrous ammonia getting off to a fast start hinge on greater side-dressing sales in the Great Lakes and Great Plains states, and further acceptance of the practice of applying ammonia in the fall for use by crops planted next spring.

Fall application in cooler regions of the nation is being advocated by many agronomist as a money-saving



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and labor-saving possibility for farmers. They also point out that when ammonia is applied during the fall plow down, the nitrogen speeds decomposition of stover resulting in increased humus, before planting the following spring. Loss of the nitrogen from leaching is negligible, most experts agree.

E. W. Thomas of Boonville, Mo., president of AAI, predicted the increased use of ammonia in a statement last January which we published at the time. He also forcast the use of this easy-to-apply fertilizer in new areas.

DOMESTIC PRODUCTION OF AMMONIA COMPOUNDS

Chemical & basis	Unit	PRODUCTION May 1954	PRODUCTION April 1954	PRODUCTION May 1953	STOCKS AT PRODUCTION PLANTS May 31 1954	STOCKS AT PRODUCTION PLANTS Apr. 30 1954
Ammonia, synthetic anhydrous	Short tons	249,837	232,246	192,424	24,359	21,396
Ammonium nitrate, original solution						
Total (100% NH_4NO_3)	Short tons	149,571	144,375	114,809	24,144	28,742
Fertilizer grade	Short tons	129,904	125,457	95,536	19,177	23,973
All other grades	Short tons	19,667	18,918	19,273	4,967	4,769
Ammonium sulfate, Synthetic (technical)[1]	Short tons	75,910[2]	78,233[3]	38,504	36,689	27,814[3]

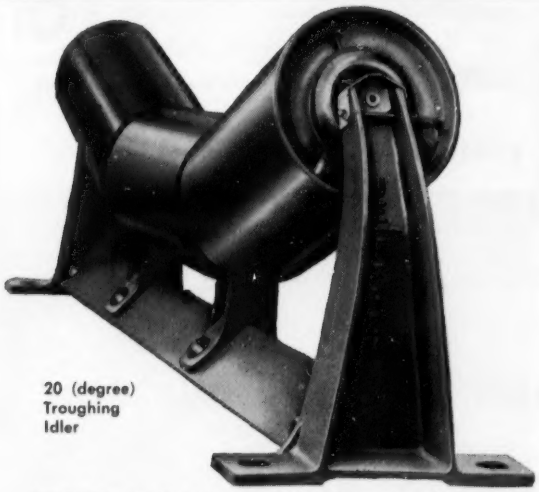
[1] Excludes byproduct coke oven production which is published by the Bureau of Mines in the Monthly Coke Report.
[2] Includes quantities for 2 plants previously not reporting.
[3] Revised.
Source: U S. Department of Commerce.

Nitrogen Division Distributes Belgian Goods

Effective July 1, Nitrogen Division, Allied Chemical & Dye Corporation became sole distributor in the United States for ammonium nitrate - limestone fertilizer produced in Belgium, it was announced by F. T. Techter, Executive Vice President.

This type of granular fertilizer has had favorable acceptance for many years in the United States, where it has wide general use as a nitrogen top dressing material. It contains 20.5% nitrogen, combined with limestone, which makes it a non-acid forming fertilizer.

The Belgian fertilizer will be stored at leading Eastern Seaboard and Gulf ports. It will be sold through regular Nitrogen Division marketing channels by the Division's present staff of sales representatives.



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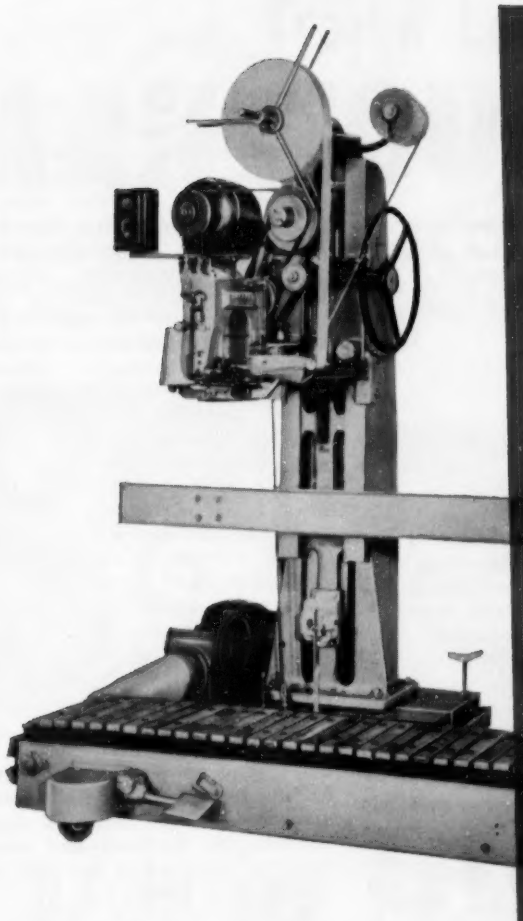

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NITRIFICATION CHARACTERISTICS OF BLUE LUPINE SEED MEAL

By K. G. CLARK, V. L. GADDY, *and* F. O. LUNDSTROM
Fertilizer and Agricultural Lime Section
Soil and Water Conservation Research Branch
Agricultural Research Service
U. S. Department of Agriculture
Beltsville, Maryland

In recent years the blue lupine **(Lupinus angustifolius)** has assumed increased importance as a winter-cover and green-manuring crop in the Gulf Coast area of the Southeastern States (1). The data in table 1 show that production of blue lupine seed was nearly 14 and 40 times as much in 1949 and 1950, respectively, as in 1943. In 1951 and 1952 seed production declined to about 13 and 26 percent, respectively, of the all-time high recorded in 1950. The acreages harvested for seed increased from an annual average of 33,000 acres for several preceding years to 234,000 acres in 1950, declined to 49,000 in 1951 and increased again to 59,000 in 1952 (2).

Large stocks of the record seed crop produced in 1950 were acquired and held by the Commodity Credit Corporation, U. S. Department of Agriculture, in connection with price support programs in effect at the time. As indicated in table 1 these stocks exceeded 55,000 tons on June 30 of both 1951 and 1952. Inasmuch as the stocks were greatly in excess of requirements for seeding purposes and the seed was considered unsuitable for feed purposes owing to its content of alkaloids, reported to be as high as 0.5 percent,—largely lupinine ($C_{10}H_{19}NO$) and sparteine ($C_{15}H_{26}N_2$)—the surplus was marketed for fertilizer purposes. Some 500 tons of whole and crushed seed were marketed domestically prior to June 30, 1952 for use largely as a water-insoluble nitrogen source in mixed fertilizer production. More than 18,000 tons similarly were marketed in the year ended June 30, 1953, and the balance or about 37,000 tons of government held stocks before April 30, 1954.

The available sample of crushed, unextracted blue lupine seed had the following analysis:

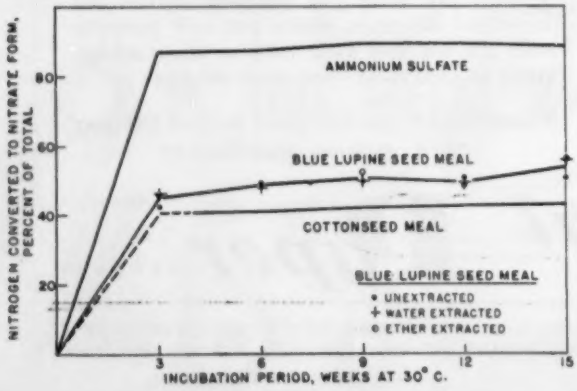
	Percent
Total N	5.23
Water-insoluble N	3.13
P_2O_5	.93
K_2O	.80
Water soluble	34.3
Ether soluble	6.7
Moisture	7.7

Because of the apparent lack of information on the availability of the nitrogen of blue lupine seed meal to plants, the nitrification characteristics of the meal as an index of its suitability for fertilizer use were determined. For this purpose the standard procedure was employed for determining the percentage of the total nitrogen converted to nitrate form during incubation of the crushed seed in soil media. Incubation periods ranged from 3 to 15 weeks at 30° C. in Morgnec silt loam soil.

Nitrification tests were conducted on water-extracted, ether extracted, and both water and ether extracted fractions as well as on the unextracted meal. Presumably differences in nitrification behavior among the fractions and the meal itself then could be attributed to the presence or absence of the alkaloid and oil contents. Although slight differences were observed among the fractions at different incubation periods, the differences are believed to be within the limits of experimental error. The observed nitrification data are shown in figure 1. The data for ammonium sulfate were obtained simultaneously with those for the lupine seed meal, whereas those for unextracted cottonseed meal were determined in an earlier series of experiments in which the nitrifying capacity of the soil appeared to be at a somewhat lower level—81 percent for ammonium sulfate in comparison to the present 89 percent. The curve for blue lupine seed meal represents the average of the indicated values obtained for the water-and ether-extracted fractions of the meal and the unextracted meal.

Based on these data there is no indication that toxic effects attributable to the alkaloid or oil content of unextracted blue lupine seed meal would be expected from its fertilizer use. The unextracted meal appears to be as suitable for this purpose, both with respect to degree and pattern of nitrification, as materials more commonly used, including other seed meals and some sewage sludges and process tankages.

(1) McKee, Roland. The Lupines. U. S. Dept. Agr. Yearbook of Agriculture 1948: pp. 712-714.
(2) United States Department of Agriculture. Agricultural Statistics 1953: p. 573; 1952: p. 648.



Nitrification Characteristics of Blue Lupine Seed Meal, Cottonseed Meal, and Ammonium Sulfate in Morgnec Silt Loam Soil.

Table 1.—Production and stocks of clean blue lupine seed[1]

Year	Production, calendar year	Stocks held June 30		
		Dealers	U. S. Government	TOTAL
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
1943	5,100	.....	.....	.....
1944	7,100	28	802	840
1945	14,500	3	281	284
1946	42,200	1	.....	1
1947	55,000	7	681	688
1948	31,200	4,131	12,358	16,489
1949	75,000	37	.....	37
1950	201,900	1,041	32	1,073
1951	26,800	5,061	132,589	137,650
1952[2]	52,500	9	114,303	114,312

[1] Compiled from U. S. Department of Agriculture, Agricultural Statistics 1947: tables 369, 370, 371, 372, 1953: tables 396, 398, 399 and 400.
[2] Preliminary.

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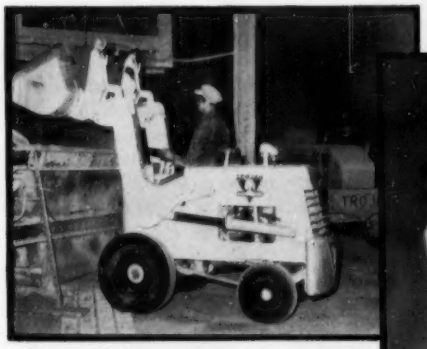

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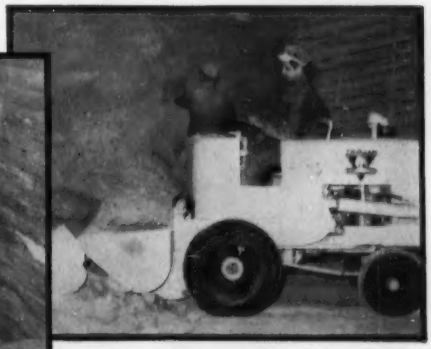

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SAFETY SECTION NEWS - - -

A SOUTH CAROLINA SAFETY SECTION of the Accident Prevention Conference is being organized by Vernon Gornto and Tom Clarke. It will meet November 18-19 at Spartanburg, with Faith Clayton in charge of the whole conference and Tom Clarke as Fertilizer Section program chairman.

VERNON S. GORNTO, CHAIRMAN FERTILIZER SECTION

Safety Director and Manager of Insurance Department for Smith-Douglass Company, Incorporated, Norfolk, Virginia; General Chairman, Fertilizer Section, National Safety Council; Past General Chairman, Fertilizer Section, Southern Safety Conference; Past General Chairman, Fertilizer Section, North Carolina Safety Conference; Member Fertilizer Section, Virginia State-Wide Conference, 1947 to 1954; Vice President and member of Board of Directors, National Insurance Buyers Association; Graduate, Mutual Insurance Institute, Chicago, Illinois, 1953; Member, American Management Association; Member, Social Security Committee, Virginia State Chamber of Commerce; Research Affiliate, University of Minnesota; Member and former secretary, Norfolk Kiwanis Club; Member, Norfolk Sports Club; Member, Toastmasters International; Member, Downtown Club of Norfolk; Active in Church, Fraternal, and Civic affairs.

Fertilizer Workers In Safety Study

A motivation study among workers in the nation's fertilizer plants will be made by the National Safety Council, whose Fertilizer Section has obtained the services of Dr. Charles W. Nelson, director of research and planning for the University of Chicago's Industrial Relations Center, to direct the research project.

The purpose of the motivation study is to obtain actual field data on the learning processes, motivations and work habits of the average fertilizer worker. The study will enable the section to produce training aids that more effectively appeal to workers individually and as a group. It should also help the industry improve its supervisory techniques and to utilize workers more effectively.

The research project has the support of the American Plant Food Council and the National Fertilizer Association. Paul T. Truitt, president of the Council, and Dr. Russell Coleman, president of the association, have expressed the conviction that the study will be a contribution of vital importance to fertilizer management since it will serve to point up specific needs of the industry for safety teaching and worker motivation.

In conducting the confidential survey, Dr. Nelson will interview fertilizer worker groups at volunteer plants during the rush season of 1955 when accidents are normally at a peak.

Management and supervision also will be consulted for observations on the safety problem. Once the specialized problems of the fertilizer industry are known, the observer will make visits to other fertilizer plants to check the observations. A preliminary report to be made to fertilizer management in the summer of 1955 will include a brief checklist of points to watch in hiring men.

A final report will be made to the Fertilizer Section's annual October meeting.

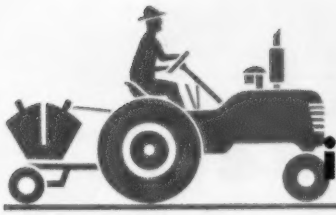
The executive committee of the Fertilizer Section is now receiving funds for the project and is soliciting plants in which the interviewing will take place. Contributions to the fund may be sent to the Fertilizer Study Fund, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill. Checks should be made payable to the National Safety Council. Inquiries should be addressed to T. J. Clarke, G L F Soilbuilding Service, Ithaca, N. Y., vice-chairmen of the section, or to Stewart A. Washburn, sectional representative at the Council.

EXECUTIVE COMMITTEE

New members added to the Executive Committee of the Fertilizer Saftey Section are: Elmer Perrine, Nitrogen Division, Allied Chemical & Dye Corp., New York; Rod Martinet, E. Rauh and Sons, Indianapolis; Charles Martin, Miami Fertilizer Co., Dayton, Ohio; J. R. Terry, Phosphate Division, Davison Chemical Co., Bartow, Fla.; Ray Murray, Swift & Co., Chicago.

Renominated for new terms are: U. C. Diserens, Phillips Chemical Co., Bartlesville, Okla.; Vernon S. Gornto, Smith-Douglass Co., Inc., Norfolk; H. R. Krueger, Snyder Chemical Co., Topeka; R. E. Bennett, Farm Fertilizers, Inc., South Omaha; A. B. Pettit, Davison Chemical Co., Baltimore; T. J. Clarke, G. L. F. Exchange, Ithica; J. Lauren Shopen, Consumers Cooperative Assn., Kansas City; J. E. Smith, Spencer Chemical Co., Pittsburg, Kans.

Named as alternate is A. L. Waugh, International Minerals & Chemical Corp., Chicago.



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Two Simplicity Gyrating Screens keep operations humming at this large Southern fertilizer plant. Working as a team, they handle the output of two 14" x 7" bucket elevators. A 3' x 8' Model "LS" Simplicity Single Deck Screen handles as much as 50 tons of super phosphate per hour; and a 3' x 6' Model "C" Simplicity Single Deck Screen handles all other fertilizer ingredients at about the same rate of speed. Both screens are set at 20° and rotate with the flow of materials. There is virtually no blinding, as the screen in the photo, which has not been brushed or cleaned, shows. The splendid performance of this Simplicity team is typical of the fine job Simplicity Screens are doing throughout the fertilizer industry. They can help speed up operations and increase production in your plant, too. Write us today for complete information.

118

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ENGINEERING COMPANY • DURAND, MICHIGAN

SAFETY SECTION PROGRAM AT CHICAGO Oct. 18-19

October 18, 1954 2:00 P.M.

Report of the Chairman:

An analysis of the work of the Fertilizer Section for the year just closing. Vernon Gornto, General Chairman.

Election of Officers:

Presenting the new slate to the membership.

John Smith, Chairman
Nominating Committee
Spencer Chemical Co.

Reaching The Worker With The Safety Program:

Dr. Chas. W. Nelson
Director of Research
and Planning
Industrial Relations
Center
University of Chicago

Dr. Nelson will outline the importance of knowing the behavior patterns and motivational influences of the worker you desire to reach with any kind of program. The Fertilizer Section is considering a project to discover the learning habits of fertilizer workmen. The purpose of the study will be to gather data that can be used as reference in preparing posters, films, safetygraphs and other visual aid materials. We can do this more intelligently if we can more clearly define the best medium and the clearest language to be used. Dr. Nelson will discuss this phase of our proposal and perhaps draw on other studies to make his points clear. Here is a subject of interest to every executive who wants to improve production, and increase incentive as well as assure a safer plant.

A Small Plant Program That Will Work:

W. C. Creel
Safety Director
Department of Labor
North Carolina

Billy Creel has one big feather in his cap. Under his sponsorship the State of North Carolina devised and administered the first formal Statewide safety program devoted exclusively to small fertilizer plant problems. Billy has it all in writing just as it was used successfully in North Carolina. He will tell you how it was done— and more important— how you can put it in effect in your own plant. You have been asking repeatedly for this topic. Bring along a couple of your plant managers to hear it.

Visual Aids To Supplement The Small Plant Program:

R. R. Murray
Safety Director
Swift & Company

Your Visual Aids Committee, headed by Ed Burroughs of Royster-Guano, has been busy. They have devised a number of simple aids that all plant managers can use to pep up their meetings. There is no skill required beyond a working knowledge of fertilizer plant equipment and problems. These aids are in color. They have been designed for use in the lunch room, locker room, or wherever else you hold your monthly safety meeting. They can be used to train foremen as well as rank and file employees. We'd like to have you cast a critical eye over these because they must be put to use to be effective.

Stump The Experts:

Your chance to bring your problems out in the open. We can handle technical questions as well as advise on Case Histories and Personnel Education. There will be an experts panel both afternoons using whatever time remains from the regular sessions. All the "Section" experts like A. B. Pettit, Stewart Washburn, John Smith, Curtis Cox and Vernon Gornto will be present. But we're asking a new group to help us as well. There will be lots of audience participation in this— plus lots of hot potatoes put out to cool.

Panel Will Include:

W. A. Stone — Superintendent — Wilson & Toomer Fertilizer Company Maintenance Hazards

Curtis Cox — Ass't. Manager — Virginia-Carolina Chemical Company. Fertilizer-Insecticide Mixtures

W. E. Powell — Division Mgr. — Liberty-Mutual. Minimum Medical Program

W. H. Henderson — Coop. Plant Foods, Dynamite

E. C. Perrine — Technician —Allied Chemical & Dye. Liquid Nitrogen

J. Mark — Director — Iowa Farm Supply Co. Interesting The Foreman

J. F. McKenna — Safety Director — Lion Oil Company. Anhydrous Ammonia

A. J. Brent — Vice President — Southern Fertilizer & Chemical Co. Reaching The Worker

A. E. Johnson Illinois Farm Supply, Plant Wide Contests

D. Mac Donald — Safety Engineer — Anaconda Copper Company. Triple-Super & Acid Handling

B. J. Phillips — Safety Director — Coronet Phosphate Company. Phosphate Mining

M. H. Talbott Kingsbury & Company; Tractor & Payloader

J. D. Acree — Crawford Chemical Company. Ideas About Safety Equipment.

D. A. Williams — Manager — Peavey Fertilizer Plant. Blasting Problems.

October 19, 1954
Section Luncheon
12:00 P.M.

Remarks of New Chairman:

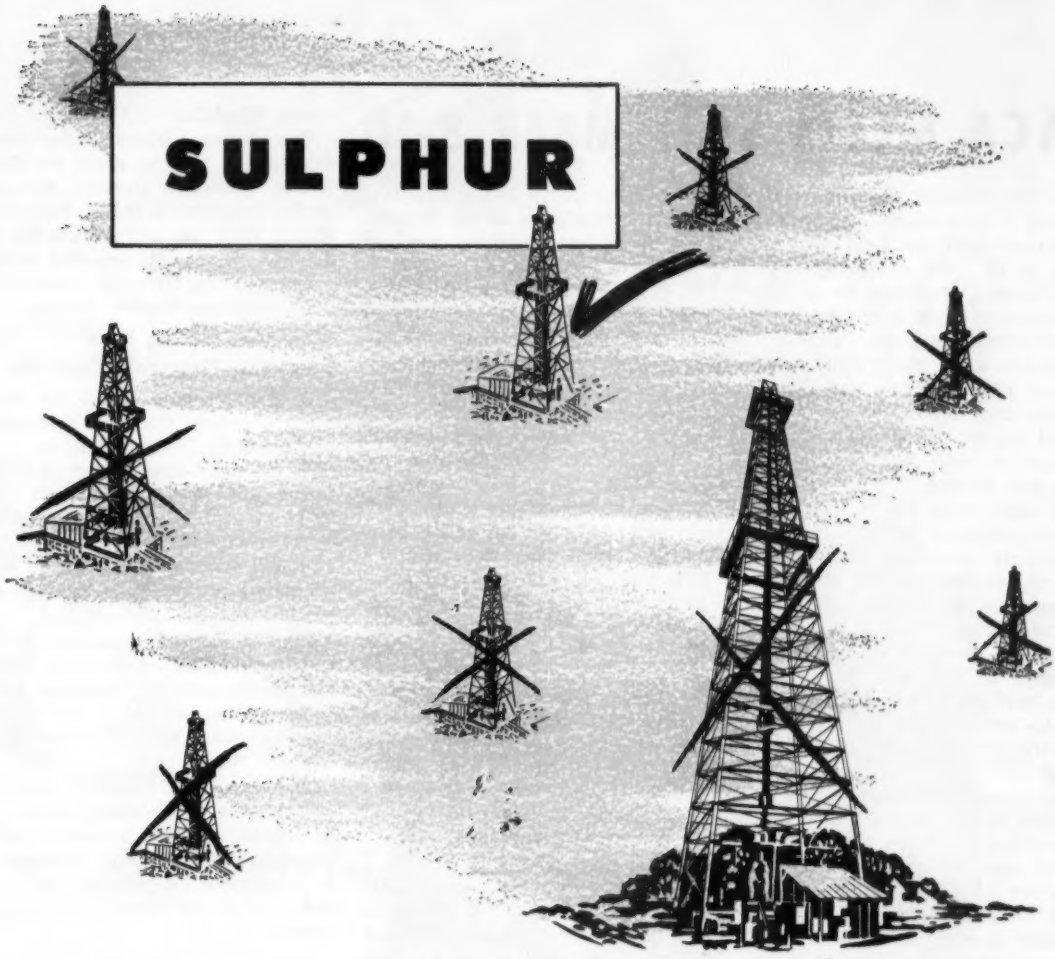
A forecast of the work of the section during 1955 by the officers selected on Monday. Your comments will be solicited.

The Job Ahead: R. J. Rhinehart; Arkansas Power & Light

Mr. Rhinehart is one of the best inspirational speakers in the country.

Gadget Display: John Miskelly, Mathieson

This may well be the most dramatic exposition of common hazards with suggested correction that you will ever see.



. . . producing Dome Sulphur is a *Chancey* business

"What is the cost?," is a constant and persistent query in the minds of managers whether operating a manufacturing plant or a mine.

When erecting a manufacturing plant the manager selects his location in regard to transportation of raw materials to the plant and distribution of the finished goods. On the other hand, a mine is found where nature has placed the ore and production must be in that locality.

In the case of production of sulphur by the Frasch Process, the ore lies 500 to 2500 feet below the earth's surface where nature made the underground formation. No engineer can see producing conditions.

Because of variations in formations, some sulphur mines produce efficiently and cheaply. Cost of production and marketing compared with the price determines whether the sulphur is commercially available.

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NACA MEETS SEPTEMBER 8-10

The 21st Annual Meeting of the National Agricultural Chemicals Association will be held September 8, 9, 10, 1954, at Spring Lake, New Jersey, according to an announcement by Lea S. Hitchner, the association's executive secretary. Headquarters for the meeting will as usual be The Essex and Sussex with accommodations for representatives at the nearby Monmouth. Formal sessions will be held at The Essex and Sussex.

Tentative plans for the program include addresses by principals in government, industry, and public relations, according to Mr. Hitchner. Business sessions will be held each morning of the three day session.

David E. Price, M. D., Assistant Surgeon General, U. S. Public Health Service, is scheduled to discuss the contributions of pesticides to health, Mr. Hitchner, announced July 26.

"The increasing importance of insecticides in the public health programs of the world and the relationship of pest control chemicals to production of food makes the Assistant Surgeon General's remarks especially timely." Hitchner stated.

As announced by Hitchner, the first day's session also includes an address by the association president, Paul Mayfield, who is general manager of Naval Stores Department, Hercules Powder Company, Wilmington, Delaware. The program calls for the secretary's report of the association's activities for the year. Dr. Frank H. Jester is scheduled to discuss the public relations aspects of the pesticide industry. Jester is information director for North Carolina State College School of Agriculture, Raleigh.

Election of three members of the Board of Directors for five-year terms is slated for September 8. A meeting of the Board of Directors for election of Association officers will be held Wednesday night. A reception for members and guests is planned for Wednesday evening.

One of the highlights of the meeting will be a panel discussion Thursday morning on the Miller Pesticide Residue Amendment to the Federal Food, Drug and Cosmetic Act, according to the Association spokesman. He said that the panel for this discussion will include members of the Association staff and representatives of government agencies.

The program lists an Annual Golf Tournament to be held at a local country club. The annual banquet is scheduled for Thursday evening.

The theme for the Friday morning session according to the announcement is "Up-to-date information for the Success of the Industry." William W. Allen of the Dow Chemical Company, Midland, Michigan, will preside at the session. Members will be given the opportunity to hear a discussion on using "miracle drugs" in agriculture by two USDA officials. The first part of the address will be given by Dr. Henry Welch, Director, Division of Anti-Biotics, Washington, D. C., and the second part by John C. Dunegan Principal Pathologist of the Agricultural Research Service.

The Friday morning session calls for an address by W. R. Dixon of Dow Chemical Company, Midland Michigan, who will speak on personnel training programs for industry. Dr. John F. Adams will discuss inventories and consigned stocks, and their relationship to business activities in the pesticide industry. Dr. Adams is director of the Bureau of Economic and Business Research, Temple University, Philadelphia, Pennsylvania.

The committee responsible for setting up the program is headed by Richard Yates, Sales Manager, Agricultural Chemicals, Hercules Powder Company, Wilmington, Delaware. Other members of the committee are Howard J. Grady, Vice President, California Spray-Chemical Corporation, Washington, D. C.; P. J. McManus, G.L.F. Soil Building Service, Div. of Cooperative, G.L.F. Exchange, Ithaca, New York; and C. Bruce Rennie, General Manager, Black Leaf Division, Virginia-Carolina Chemical Corporation, Richmond, Virginia.

The closing address of the three-day session will be given by E. H. Fallon, Assistant General Manager of the Cooperative G.L.F. Exchange, Ithaca, N. Y. He will discuss the industry's No. 1 customer—the farmer—and what he offers the industry.

Monsanto Builds New Pesticide Research Facilities

A new research center for Monsanto Chemical Company's Inorganic Chemicals Division will be built on a company-owned tract at Creve Coeur, Mo., it was announced July 22 by vice president J. L. Christian, division general manager. Construction will get under way in the near future with completion planned for the fall of 1955.

Present division research facilities are located at Everett, Mass., and Dayton, Ohio. Personnel presently located at those places will continue there until the new quarters are ready.

The two-floor research building will provide 32 laboratory units and 16 offices, and will accommodate a research staff of about 160 people. A customers' demonstration area and a technical library also are included.

FMC Acquires National Distillers USI Plant

Negotiations have been completed for the sale of National Distillers Products Corporation's USI Fairfield, Maryland plant at Baltimore to Food Machinery and Chemical Corporation, it was announced July 27 by John E. Bierwirth, president of National Distillers Products Corporation and Paul L. Davies, president of Food Machinery and Chemical Corporation.

Simultaneously, Mr. Davies announced that the production units and pesticide business of National's USI Division would be operated as a separate Division. "The Fairfield Chemical Division" will be under the general management supervision of J. V. Vernon, President of FMC's Niagara Chemical Division.

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(Continued from page 22)

just mentioned, namely: soils, diseases, and insects. This is not because research in other areas, such as plant nutrition and physiology, farm management, food processing, and the marketing of agricultural products, for example, may not be of equal importance, but because I believe the ones discussed actually will be those most vitally related to agricultural progress over the next quarter to half century.

Unless improvement is made in the rate of development of new knowledge, as well as in the rate at which existing knowledge is pressed into use on farms, we might as well begin now to anticipate grave difficulty in meeting our needs in the years ahead.

I want to add, however, that I see no reason for alarm. I believe that the land resources of this nation, if properly managed, can supply all basic agricultural needs for at least the next 100 years without any major difficulty, providing the pace of soil, crop and livestock research, and our extension and information programs can be expanded uniformly over the years.

Around the turn of the century, when our population actually may reach 275 million people, requirements for food and fiber may begin to catch up with our ability to produce, as judged by estimated land resources and present production standards. When that time comes, it would follow naturally that additional areas of land will be pressed into service. But, every new acre added by irrigation in the arid regions and by drainage of swampy land in the southeast, will be expensive land. The more such land required, the higher the food bill will be.

Through an adequate research and extension program, designed to improve efficiency of production, we can long delay the day when such land, of necessity, will have to be pressed into service. I venture to say that none of us here today will live to see that time come.

In 1950, the ratio of harvested cropland to total population was 2.25. In other words, each one of us enjoyed production from two and one quarter acres in 1950.

To maintain this ratio with our present rate of population gain would require that 5.6 million acres of cropland be added annually.

It is clearly obvious that this ratio can not be maintained. But, by way of illustration, in 1950 the Bureau of Reclaimation estimated that between 5 and 10 million acres of new land could be added by irrigation in the 17 midwestern states by 1975. Assuming that we were successful in getting 75 percent of this amount, or 7.5 million, and that by 1975 we had lost only 2.0 million acres of submarginal land and land presently in irrigation, we then would have gained 5.5 million acres, or almost exactly enough cropland to maintain our present ratio for a period of only one year. If by 1975, we could add another 5.5 million acres through drainage, the ratio could be maintained for one additional year. What this means is that

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if we could have this additional new land right away, instead of by 1975, we would have enough so that each of us would have 2.25 acres of harvested cropland only until the end of 1956.

To agricultural leaders, such as you, the direction which agricultural planning must take is all too obvious to mention. The only solution lies in permanent care of our land so that we can get increasingly improved efficiency on the farm—more production per acre.

Let us, for a moment, go back to our assumption that by the year 2000 there will be a population of 275 million. Some estimates are in the range of 250 to 265 millions, but I think that 275 millions is a conservative estimate. And, let us further assume that, in addition to the 11 million acres net gain in cropland by 1975, we would be able to gain another 11 million between 1975 and the year 2000. That would give a total of 367 million acres of harvested cropland, or 1.33 acres per capita, as compared with 2.25 acres today. The difference is 0.92 acre, or 40 percent less land per person. In order for the nation to be as well fed as it is today, each acre would have to produce 40 percent more than it does today.

Is that possible? Of course it is. We have made a like improvement in the past 15 to 20 years.

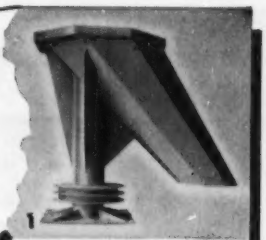
And more production per acre is the goal of every farmer. He should be just as interested in more efficient farming as the research scientist is in obtaining new and useful knowledge.

To you, this means continued expansion of our programs of crop and livestock improvement; ever better disease, insect and weed control; stopping soil deterioration; and using adequate amounts of lime and fertilizer on every acre where needed.

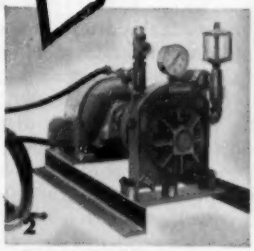
Farmers are just now beginning to realize the real significance of replenishing their soils through fertilization—and well they should. From 1935 to 1953, the cost of goods and services used in farm production rose 132 percent. Yet fertilizers went up only 51 percent. At the same

HAVE YOU OVERLOOKED ANY OF THESE IDEAS?

There are places in your fertilizer plants where low-cost Johnson accessories can profitably increase the efficiency of your bulk-material storage, batching and blending operations . . .

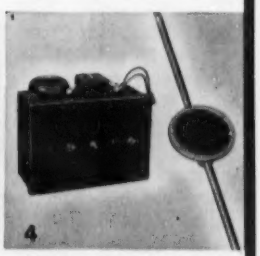


1 **Pivoted Distributor** feeds materials to multiple-section bins. Turns, locks by ground-level control.

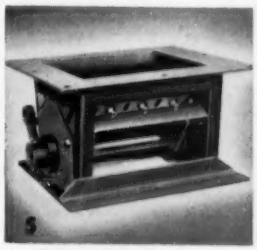


2 **Rotary Vane Compressor** supplies 7 cu. ft. air pressure per min. to aerate silos, bins. 15-lb. limit-relief valve.

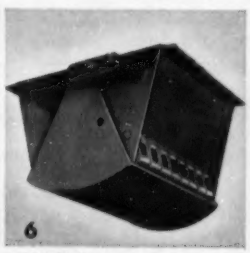
3 **Aeration Fittings** properly spaced in storage bins and silos keep bulk materials fluid, free-flowing.



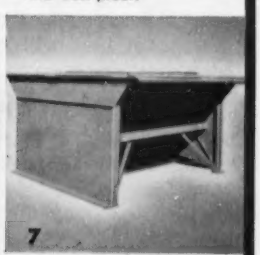
4 **Bin Gauges and Signals** accurately register "hi-lo-levels". Automatic. Water and dust-proof.



5 **Rotary Plug Valve** controls flow of finest materials. Plug works freely in self-aligning bearings.

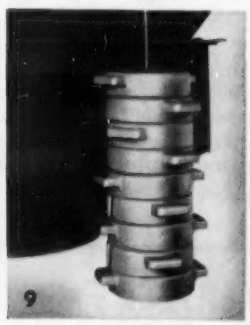


6 **Fill Valves** single-clam, radial-type, have choker weights on closing edge for jam-proof closing.

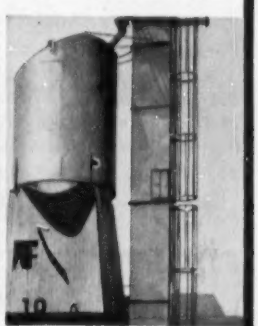


7 **Receiving Hoppers** all sizes, types for box-car, hopper-bottom car, truck, or bag delivery. Weather-tight.

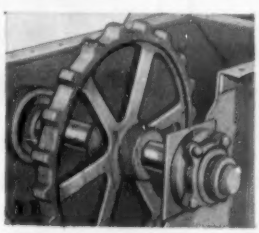
8 **Elevator Buckets** all-welded, light, smooth. Two types, 7 sizes. *Steel chain* has carburized knuckles.



9 **Batcher Test Weights** are available in sets of nine, 50-lb. calibrated units, and two 25-lb. steel hangers.



10 **Elevator Safety Cage** 28-in.-diameter ladder safety cage, welded to casing, costs only a few dollars per foot.



11 **Chain Sprockets** 19-tooth chilled-rim cast iron with heavy split hub; 12-tooth cast-chrome manganese.

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time the plant food content increased 35 percent, so that the real increase in cost of the actual plant foods is unbelievably small.

Here's another way to look at the price situation. According to figures released recently by the Middle West Soil Improvement Committee, fertilizer is cheaper than ever for the farmer to buy. Some of their figures were as follows:

Today, a ton of pork will pay for 9.2 tons of 3-12-12. In 1939-41, it would have bought only 3.8 tons. One ton of beef will buy 6.5 tons today, but would have bought only 4.4 tons then.

One hundred bushels of wheat today will buy 3.8 tons of 3-12-12, compared with 2.15 tons in 1940.

One hundred bushels of corn will buy 2.79 tons of 3-12-12 at today's prices, compared with 1.8 tons 13 or 14 years ago.

One hundred bushels of oats, barley and soybeans today will purchase respectively 87, 90 and 66 percent more fertilizer than before Pearl Harbor.

What better buy is there today than fertilizers in terms of the value of farm commodities? Also, in what else does or can the farmer invest, year in and year out, that returns to him two or more times his investment?

In my opinion, the addition of the proper kinds and amounts of plant nutrients to soils is the major key to efficient farming, and that with each passing year, this key will play a bigger and bigger role in perpetuating the American way of life. No industry will play a more vital role in the future welfare of this nation than will the fertilizer industry.

Changing Agricultural Picture

The following figures, taken from USDA's Agricultural Statistics for 1952, show a remarkable change in the number and size of farms in the Northwest in the short space of 10 years.

CHANGES IN NUMBER AND SIZE OF FARMS

State	Number of Farms 1940	Number of Farms 1950	Percentage Change In Number	Acres Per Farm 1940	Acres Per Farm 1950	Percentage Increase In Size
Idaho	43,663	40,284	— 7.7	235.8	328.3	38.8
Montana	41,823	35,085	—16.1	1,110.7	1,688.7	52.0
Nevada	3,573	3,110	—12.9	1,059.4	2,271.2	114.3
Oregon	61,829	59,827	— 3.2	290.9	339.8	16.8
Utah	25,411	24,176	— 4.8	287.4	449.4	56.3
Washington	81,686	69,820	—14.5	185.9	248.8	33.8
Wyoming	15,018	12,614	—16.0	1,866.1	2,728.8	46.2
Total Farms and Percentage Decrease in Number (U. S.)	273,003	244,916	—10.2			
	6,096,799	5,382,162	—11.7	174.0	215.3	24.

The increase in average size of farms is partly accounted for by the fact that 98 million acres of land were included in farms in 1950 which were not considered as being in farms in 1940. The simultaneous decrease in number of farms by 715 thousand accounts in part, of course, for the increased farm size.

This trend towards fewer and larger farms has occurred in all areas of the United States.

Just what factors are responsible may not be clearly discernible. One factor is that larger units of land can be farmed more efficiently.

If this has been one of the major factors, and I believe it has, then we might expect the trend to continue. In fact, right now we might expect that the trend would be accelerating because declining prices received by farmers the past two years have brought out more clearly than ever before the extreme importance of reducing costs per unit

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Manufacturers
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Koppers Ammonium Sulphate comes in crystals with low free-acid and moisture content. The nitrogen content is guaranteed to be not less than 20.5%.

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From St. Paul, Minn. and Kearny, N. J., Koppers Ammonium Sulphate is shipped in 100 lb. and 200 lb. bags—also in boxcars and trucks. From Granite City, Ill. and Midland, Pa., it is shipped only in boxcars and trucks.

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Acid Weigh Scales **Batching Hoppers**

Belt Conveyors — Stationary and Shuttle Types

Bucket Elevators **Hoppers and Chutes**

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Evans Metal Company

Box 97 Northside Station • ATLANTA, GEORGIA • Elgin 4338

of product.

Another factor that may have entered into the picture of fewer but larger farms, to some extent at least, is that of government loans. The following table, taken from the Congressional Record of June 23, 1954, shows that a few large farmers in each state received very high commodity loans in 1953, whereas the average was quite small in comparison.

COMPARISON OF LARGEST LOANS MADE BY CCC ON 1953-CROP, CORN, COTTON AND WHEAT, WITH ESTIMATED AVERAGE LOAN, BY STATES

	CORN		WHEAT		COTTON	
	Average 5 largest loans	Average Loan	Average 5 largest loans	Average Loan	Average 5 largest loans	Average Loan
Arizona	.....	.....	.....	.....	231,209	1,378
California	.....	.....	83,735	9,500	649,335	1,731
Idaho	2,721	1,453	114,934	3,003	.....	.....
Illinois	88,177	2,025	61,254	1,526	.....	.....
Iowa	98,535	2,154	21,747	1,147	.....	.....
Minnesota	47,816	1,843	39,192	1,194	.....	.....
Mississippi	891	778	19,565	2,786	479,535	372
Montana	.....	.....	176,714	4,000	.....	.....
New York	9,696	1,487	15,254	1,126	.....	.....
Oregon	4,321	2,173	176,538	6,293	.....	.....
Washington	10,879	2,593	219,968	10,500	.....	.....

Whatever the cause, the trend is underway and will likely continue for some time, to a certain degree here in the Northwest, but especially in such states as North Carolina, South Carolina, Kentucky, Tennessee, Mississippi, Louisiana and Alabama, where the average farm size (1950 Census) is still less than 100 acres.

To you, as representatives of the fertilizer industry, this national trend toward more efficient land units is of considerable significance.

As you are aware, for the country as a whole, proper fertilization is the most vital single production factor which the farmer can use to lower costs and increase profits.

As farms have become larger, they have fallen under more progressive management. This, no doubt, is one of the reasons why the consumption of fertilizers has increased every year since 1938. In my opinion, it will increase tonnage-wise as much in the next 15 years as it has in the past 15. That will mean 38 million tons of fertilizer by 1969-70. We could use all of this increase of 15 million tons on our 485 millions of acres of pastures now in farms, and if it were to be applied uniformly, each acre's share would be only about 62 pounds.

If our pastures alone are given only a small measure of the attention they should get, what question could there be about the future of the fertilizer industry?

SOUTHERN FERTILIZER & CHEMICAL COMPANY

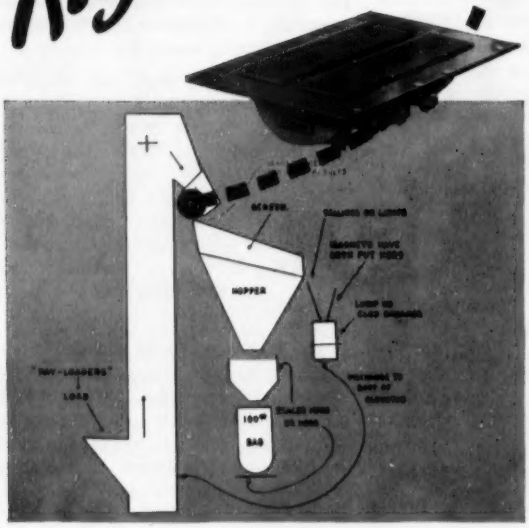
Main Office: Savannah, Georgia

Superphosphate — Sulphuric Acid — Complete Fertilizers
Ammoniated Superphosphate

Export — Import

Plants: Savannah, Ga., Atlanta, Ga.,
Charleston, S. C., Roebuck, S. C.

Right Here



A DINGS NEW PERMA-PLATE MAGNET CAN SAVE YOU PLENTY...

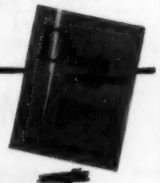
A new "test-proven strongest"* Dings Perma-Plate magnet in the discharge chute of your bagging mill elevator can stop a lot of damage caused by tramp iron.

Powerful, non-electric Perma-Plates pull out any iron — wire, nails, iron or abrasion—that gets into fertilizer, wrecks machinery and spoils product purity.

Perma-Plates have a certified strength that's guaranteed for the mechanical life of the unit. They can be installed almost anywhere in chutes, ducts, feed trays for machinery and product protection and fire protection. Write today for Catalog C-1205-B.

DINGS MAGNETIC SEPARATOR CO.
4711 W. Electric Ave., Milwaukee 46, Wis.

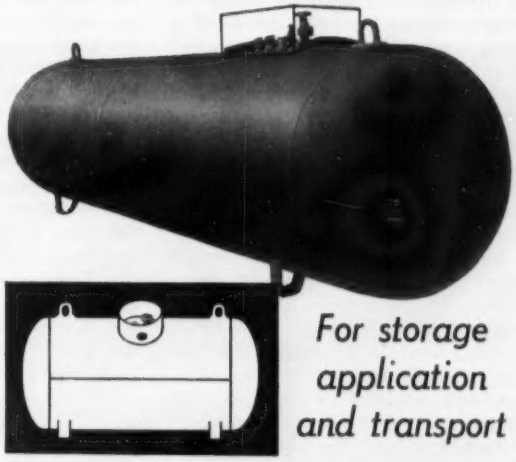
*In the laboratories of one of the world's largest grain processors.



Get acquainted with the complete Dings line, ask for Catalog C-5000-B.

Dings Magnets

CHARLOTTE
DUO-TESTED
Anhydrous Ammonia Tanks



For storage application and transport

Charlotte Anhydrous Ammonia Tanks are of all-steel welded construction — 265-lb. design working pressure, UW-52, ASME Code.

Standard sizes 300, 500 and 1,000 gallon capacities for storage. 100 and 150 gallon capacity applicator tanks.

Skid and truck tanks also available.

All fittings steel.

GUARANTEED
to be constructed in accordance with ASME Code.

CERTIFIED
to be hydrostatically tested to 1½ times design working pressure. Air tested to 100-lb. after fittings are installed.

Write today for full details and prices.

CHARLOTTE TANK CORPORATION
Post Office Box 8037
CHARLOTTE 8, NORTH CAROLINA

ALABAMA COMMITTEE STUDIES NEED FOR STATE FERTILIZER SOCIETY

At the 1954 Alabama Fertilizer Conference, held in Auburn and Tallassee on May 27 and 28, one item in the published program called for "discussion of the advisability of a state fertilizer society."

The discussion was held at the banquet meeting in Auburn, and a motion was approved to compose a committee of three to explore the need and desirability of an organization of industry individuals to better cooperate with research and education forces serving agriculture.

The committee consisted of Frank Boyd (Virginia Carolina Chemical Corp., Montgomery), chairman of the evening meeting; Howard T. Rogers, head of the station Agronomy and Soils Department; and J. C. Lowery, extension agronomist. Charles W. Summerour (American Potash Institute, Montgomery) was chosen secretary to the committee.

The three-man group was further authorized to enlarge the committee to include every phase of industry activity. The larger body is to serve as a steering committee in formulating plans for an educational organization to carry out the general purposes outlined in the motion passed at the conference.

The three appointees held a meeting last month and selected a 12-man steering committee composed of the following: J. Finklea Nettles, Superior Fertilizer Co., Peterman; Marion L. Hanahan, Home Guano Co., Dothan; Bill Nichols, Sylacauga Fertilizer Co., Sylacauga; C. H. Elrod, International Minerals & Chemical Corp., Montgomery; J. R. Pratt, F. S. Royster Guano Co., Montgomery; Frank Boyd, Virginia-Carolina Chemical Corp., Montgomery; Ernest B. Johnston, Centrala Farmers Co-Operative, Selma; Warren Belser, U. S. Steel Corp. (Coal Products Div.), Birmingham; Charles W. Summerour, American Potash Institute, Montgomery; Ed T. Spindle, Montevalla Lime Co., Montgomery; J. C. Lowery, AES agronomist, and Howard T. Rogers, experiment station agronomist. The latter two will serve in an advisory capacity.

Each of these men has accepted the assignment, and at an early date they will initiate committee meetings to further investigate the proposition. If the need for an organization is found to exist, this group will then draw up tentative plans for an association of individuals interested in mixed fertilizers, fertilizer materials, soil amendments, and associated supplies and equipment.

The committee will issue progress bulletins to industry members doing business in Alabama, and—if conditions warrant—will submit a report with recommendations at the next Alabama Fertilizer Conference, which in all probability will be held this winter.

A Popular Organic Conditioner

FUR-AG is an inexpensive organic conditioner. It speeds up curing in the pile, helps prevent mixed goods from caking, and provides bulk. Heated to 350° F for several hours in the presence of small amounts of steam and acid, FUR-AG is freed from plant diseases, insects, seed, and other similar contaminants. It is being used by leading fertilizer manufacturers. FUR-AG is produced and available in volume the year around. More complete information on request.

The Quaker Oats Company
CHEMICALS DEPARTMENT
345 The Merchandise Mart
Chicago 54, Illinois

CHEMICO PLANTS
are profitable investments

Chemico's services cover every detail in design and construction of sulfuric acid plants, acid concentrators, complete fertilizer plants and P-A Venturi Scrubbers for fluorine fume elimination. Chemico's performance guarantees are backed up by 40 years of experience. Consultation involves no obligation.

CHEMICAL CONSTRUCTION CORPORATION
488 Madison Avenue, New York 22, N. Y.

New Bemis Plant In California

A new Bemis Bro. Bag Company multiwall paper shipping sack manufacturing plant, under construction since October, 1953, has started operations at Wilmington, California. It replaces the former Wilmington plant which the company had operated for 22 years.

Tilt-wall reinforced concrete construction was used in erecting the 125,000 sq. ft. building which includes an air conditioned two-story office wing, a cafeteria and miscellaneous working areas. The grounds are landscaped and a parking lot adjoins the building.

The new Bemis Wilmington plant provides increased multiwall bag manufacturing capacity and space for planned future expansion. Full productive capacity is expected to be reached by the end of September, when all moving operations are completed.

Shell Offers Movie On Grasshoppers

With the nation facing one of the worst grasshopper outbreaks in recent years, F. W. Hatch, manager, Agricultural Chemicals Division, Shell Chemical Corporation, announces the availability of a new movie describing grasshoppers, the damage they do, and how they are controlled with modern insecticides.

"Exit Grasshoppers," a full-color 16 mm. sound film, approximately ten minutes long, shows recommended control techniques for crop land and range land. The movie was filmed during two recent grasshopper wars when aldrin, an insecticide marketed by Shell Chemical Corporation, was successfully used to quell critical infestations. In 1953, the USDA, cooperating with western ranchers, sprayed the insecticide on millions of acres of range land. More recently in June, 1954 the University of Wisconsin staged an aldrin spray demonstration in severely infested Wisconsin crops. The movie shows how the insecticide put a quick halt to grasshopper damage by killing the insects.

Bookings for the film may be arranged by writing to Shell Oil Company, Film Library, 624 South Michigan Avenue, Chicago 5, Illinois.

Markets

(Continued from page 30)

pa. Supply of Triple Superphosphate is expected to be greater than during previous season but demand continues to grow.

AMMONIUM NITRATE: Demand is rather slack at the present time and new productions are expected to help the supply situation for the new season. Prices with the exception of the Canadian material are practically the same as during the past season. Canadian production effective July 1 is $3.00 per ton lower.

You don't guess - you KNOW!

. . . HOW MANY TONS OR POUNDS PER ACRE

*"NEW LEADER" METERING ATTACHMENT TAKES THE GUESS-WORK OUT OF SPREADING!

With the "NEW LEADER" Metering Attachment you will now know exactly how many pounds of fertilizer per acre you are spreading. With the old method, the truck driver often spread the entire load of fertilizer before he realized he was spreading either too heavy or too light.

This Metering Attachment fits all late model "NEW LEADER" twin disc spreaders. It is inexpensive, easy-to-install, and accurately meters from 100 pounds to several tons per acre.

It is amazingly simple to operate and no fertilizer is spread on the ground until you are satisfied the spreader is accurately set for the correct amount per acre desired. This new Metering Attachment with the many other outstanding features of the "NEW LEADER" motor driven spreader, gives your customer the kind of consistent and uniform spreading job he expects.

CLIP ... MAIL TO

HIGHWAY EQUIPMENT CO., INC.
63 Ave., N. W.
Cedar Rapids, Iowa

Name_____
Company_____
Address_____
City_____ State_____

SEND ME:
☐ Name of nearest distributor
☐ More information on Metering attachment
☐ Combination Spreader Literature
☐ Bulk Transport ☐ Bulkmaster ☐ Complete Line

HIGHWAY EQUIPMENT CO. Inc.
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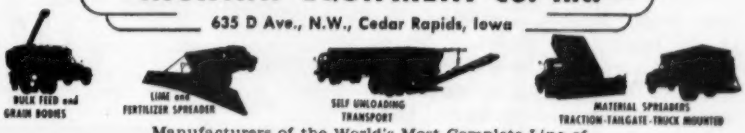

BULK FEED and GRAIN BODIES
LIME and FERTILIZER SPREADER
SELF UNLOADING TRANSPORT
MATERIAL SPREADERS TRACTION-TAILGATE-TRUCK MOUNTED

Manufacturers of the World's Most Complete Line of Spreaders and Bulk Delivery Equipment

For Bagging **-VITORGANIC-** For Mixing
(Chicago Activated Sludge)
"THE ALL-ORGANIC PLANT FOOD WITH THE BUILT-IN CONDITIONER"
CHICAGO FERTILIZER COMPANY
Exclusive Sales Representatives
ALEX. M. McIVER & SON
P. O. Box 155 Charleston, S. C. Tel. 3-4828-29

SULPHATE OF AMMONIA: Shipments are rather slack at this time of the year and prices are a few dollars less than prevailed during the past season.

NITRATE OF SODA: Movement of both imported and domestic Nitrate of Soda is relatively small but stocks are adequate and prices firm.

CALCIUM AMMONIUM NITRATE: No new importations are being made at this time of this 20½% Nitrogen. Limited stocks are available at a few ports at the going price of $51.25 in bags f.o.b. cars at the port.

GENERAL: During this summer period fertilizer movement is at a very low point and fertilizer manufacturers are making contracts for various raw materials, preparatory to the new seasons requirements. Prices generally are about the same for fertilizer raw materials, although in some instances, they are lower than last season.

New Bag Concern Building Florida Plant

Two former members of the Mente & Co. organization have formed Atlantic Bag Co., Inc. and are building a $225,000 bag plant in St. Augustine, Florida which, it is said, will be the largest textile manufacturing concern in that state. They are Roger Pounds, president, and J. A. Baggs, vice-president of the new concern and have been with Augusta Burlap Bag of Savannah since the Mente liquidation. They will produce cotton, burlap and open mesh bags.

PCB Issues Helpful Bulletins

In addition to the poster reported in our July issue, Pacific Coast Borax issues three excellent service bulletins: PF-2 on Colemanite; PF-3 on Fertilizer Borate; PF-4 on Polybor-2. James A. Naftal manager of their plant food division invites requests for these bulletins, as well as the poster, which will be supplied free if you will write him at 100 Park Avenue, New York, 17.

Potash Import Company Formed

The Potash Import & Chemical Corporation has been formed to bring muriate and sulphate of potash into Eastern United States port cities from Western Germany.

Effective July 1, 1954, offices will be at 285 Madison Avenue, New York 17, N. Y. The officers of the company are Henry Mann, president; Werner Duehrssen, vice president. Henry Maddux, well known soil authority, will be agronomist located at Raleigh, N. C. Cliff Collier will handle Southeastern sales with headquarters in Atlanta.

All of the officers and other personnel have been associated with potash imports for many years.

Contractors Machinery Co., Inc., Batavia, N. Y., announces a new 3/4 cu. yd. struck measure loader known as the Model LU-75 Trojan Loadster. It embodies a completely new idea in loader design—the elimination of all clutches.

Literature, name of nearest distributor, and information on dealer franchises can be obtained by writing direct to Contractors Machinery Co. Inc., P. O. Box 191, Batavia, N. Y.

International Paper Opens Cincinnati Office

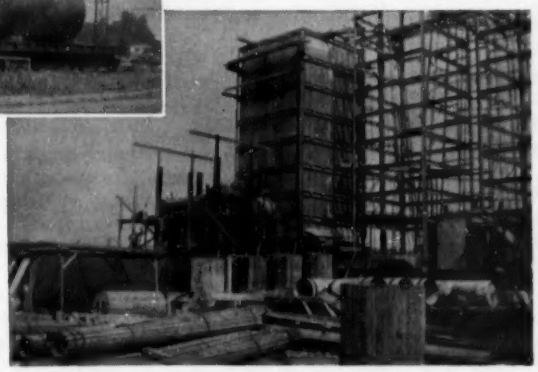
International Paper Company has opened a new branch sales office in Cincinnati, Ohio, according to an announcement by F. H. Savage, vice president and general sales manager. The new office which was opened last month is located in the Dixie Terminal Building, 49 East 4th Street. It will house representatives of three of the company's principal sales and converting divisions, the Southern Kraft Paper and Bag Division, the Bagpak Division and the Single Service Division.

James Woodrow will represent the company's Bagpak Division which makes multiwall paper bags for the packaging of feed, cement, fertilizer and the like.

Opening of the new office brings to twelve the number of branch sales offices operated by International Paper Company throughout the country. The others are located at Atlanta, Baltimore, Boston, Charlotte, Chicago, Cleveland, Dallas, Minneapolis, New Orleans, Philadelphia and Syracuse.

Arkell And Smiths Central Office Moved

Effective August 1 the new home of Arkell and Smiths' Central Division Sales office will be 2460 Northwest Boulevard, P. O. Box 5767, Columbus, 21, Ohio; telephone HUdson 8-8356.



. . . Lead Lined Equipment or Construction of Complete Acid Plants

SOUTHERN LEAD BURNING COMPANY

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Farmers depend on ARMOUR FERTILIZERS

For more than 50 years Armour fertilizers have been "making every acre do its best". Farmers know that Armour's highest-quality fertilizers are made right and cured right to give best results with all crops.

Every bag of fertilizer sold by Armour is backed by years of painstaking scientific research in the fields of chemistry and farming. Testimonials from every section of the country—on all types of crops—prove that Armour fertilizers make increased yields of better quality crops that bring higher profits.

ARMOUR FERTILIZER WORKS
General Office
P.O. Box 1685
Atlanta 1, Georgia

31 FACTORIES CONVENIENTLY LOCATED TO SERVE YOU

Albany, Ga.
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Columbia, S.C.
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Dallas, Texas
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Jacksonville, Fla.
Jeffersonville, Ind.
Memphis, Tenn.
Montgomery, Ala.
N. Kansas City, Mo.
Nashville, Tenn.
New Orleans, La.
Norfolk, Va.
Presque Isle, Me.
Sandusky, Ohio
Sigla, Tenn.
Waterloo, Iowa
Wilmington, N.C.
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Also sales offices in Havana, Cuba, and San Juan, Puerto Rico

PRESIDENT'S REMARKS AT SOUTHERN CONTROL MEET

By PARKS A. YEATS

As your president, I consider it an honor and privilege to welcome you to the Twelfth Annual Meeting of the Southern Feed & Fertilizer Control Officials' Association. We are glad you have contributed to this meeting by your presence and we invite you to add to its success by participating freely in all discussions.

I would like to digress from the usual procedure for just a moment to extend my personal appreciation to the many friends and guests of the industry who have taken the time to attend our meeting. Likewise, I express my sincere gratitude to the secretary, committee chairman, committee members, investigators, and all others for their work in furthering our Association during the past year and in helping to prepare the program. In behalf of this Association, I would also like to express our appreciation to all who have been so generous and cooperative in agreeing to appear on our program.

This Association arose out of a **Need**—A need for control officials to get together to discuss their problems with one another and exchange ideas. This not only with one another but with members of the industry, the experiment station, extension service, vocational agriculture, agricultural colleges, and other agencies. This need, no doubt, has been accentuated by the progress which has been made in recent years, not only in the feed and fertilizer industry, but in our entire agricultural economy. Although the word "control" may not strike a harmonious cord in your thinking, yet I am sure all of us would admit that feed and fertilizer control work is a necessary adjunct not only to the industry itself but to the overall framework of agriculture. The need for the exchange of ideas and the discussion of our problems is, no doubt, here to stay.

Where have we been, where are we, and where are we going? These are questions we might well ask. Most states have had a feed and fertilizer law in some form on their statutes for a long time, but only in the last ten to twenty years has the feed and fertilizer control work more or less accompanied the industry into its own and into a more important place in agriculture. Although feed control problems were discussed for several years at Southeastern and South Central Feed, Food, and Drug Officials' Conferences, it was not until April 26, 1938, in Biloxi, Mississippi, that this Association was formed as the "Southern Feed Control Officials' Association." The first annual meeting was held April 26, 1939, in Memphis, Tennessee. At each of our meetings, there was a discussion of fertilizer control problems and the possible inclusion of fertilizer control officials as a part of this Association; however, it was not until the eighth annual meeting in June, 1950, at Galveston, Texas, that our constitution was revised changing the name to the "Association of Southern Feed and Fertilizer Control Officials." Since the beginning of our Association, many of the states have revised their feed and fertilizer laws and have made considerable progress in their control work. Within the last fifteen years, we have changed from a "tag or stamp system" of collecting the inspection fee to an almost 100% "tonnage reporting system." Why, even Kentucky and Texas have now joined the ranks of the "tonnage reporting system," much to the satisfaction of the industry.

This Association has always leaned heavily on the guiding arm of the American Feed Control Officials, Inc., and the American Fertilizer Control Officials' Association. In fact, our constitution provides that the official definitions of these two Associations shall automatically become the official definitions of our Association. This also applies to the general regulations and resolutions adopted by these two groups. There has been, however, one important point of digress by this Association, and that is, in the adoption of **Standards**. Although standards have been discussed at every meeting since the beginning, it was not until the 1941 meeting in Lexington, Kentucky, that a "Committee on Standards for Special Purpose Mixed Feeds" was appointed. This Association did not meet during the war years from 1941 to 1946 and although standards for special purpose mixed feeds were drawn up by the committee during the interim years, it was not until the fifth annual meeting in June, 1947, at Memphis, Tennessee, that these standards were tentatively adopted. They were then adopted as official the following year, June, 1948, at our meeting in Asheville, North Carolina. With the possible exception of the fat standard for a dairy or cow feed being changed from 3% to 2½% at the meeting in Galveston, Texas, in 1950, our standards today for special purpose mixed feeds are essentially the same as originally adopted in 1947 and 1948. It is hoped that our standards will get a good going over here at this meeting and, if improvements in them need to be made, proper consideration thereto given. Some control officials and feed manufacturers look with disfavor on standards, while others consider them as an important tool in control work. The same thing is true with reference to a "limited grade list" for fertilizer. Although this Association has never officially adopted a limited fertilizer grade or ratio list, we have for many years through the influence of "area grade hearings" always been sympathetic and have worked for them. We may have reached the time when mixed feed standards or limited fertilizer grade list per se are no longer needed. It could be they were never needed or have served their pur-

At Twelfth Annual Convention Association of Southern Feed & Fertilizer Control Officials Skirvin Hotel, Oklahoma City, Oklahoma, June 21-22, 1954.

CLASSIFIED ADVERTISING

For Sale, Exchange and Wanted Advertisements, same type now used, EIGHT CENTS a word for one insertion; TWELVE CENTS a word for two insertions; FIFTEEN CENTS a word for three insertions, and FOUR CENTS a word for each insertion more than three; ADVERTISEMENTS FOR THIS COLUMN MUST BE PAID IN ADVANCE.

FOR SALE: Dry Mixing Fertilizer Plant. Good condition. Capacity ten thousand tons. Located in North Alabama; two railroads, Tennessee River, seven paved highways, paved farm to market roads. Well established trade. Box #5, c/o Commercial Fertilizer, 75 Third St., N. W., Atlanta, Georgia.

FOR SALE: New Leader Fertilizer & Lime Spreader, body 6 feet wide, 11 feet long, late model with auxiliary engine, bought new, February 4, 1952. For sale very reasonable. Farmers Cotton Oil Company, Wilson, N. C.

FERTILIZER SALES EXECUTIVE, experienced in buying materials, handling credits, and factory supervision, interested in making connection with progressive firm in South or Southwest. Best of references furnished. Box # 42, c/o Commercial Fertilizer, 75 Third St. N. W., Atlanta, Ga.

FOR SALE: Complete dry mixing fertilizer plant and properties, buildings and equipment only 4 years old, located in middle of fast growing west central Georgia. Business has shown good profit for years. Capacity 30 Tons per Hour. I'm 76 and want to retire. Write, phone or see A. A. Britt, Sr. Thomaston, Georgia.

WANTED: Aggressive young man, mid 30's, now employed as superintendent in acidulation and complete fertilizer plant, to develop into assistant to manager of fertilizer division of a fast growing organization in Northwest now expanding plant facilities. Must have good educational background and have clean record of getting things done. Opportunities good. Box # 30, c/o Commercial Fertilizer, 75 3rd St., N. W. Atlanta, Ga.

STEEL TANKS FOR SALE: Dished heads—all welded. Excellent for storing liquid fertilizer, chemicals, etc. At Grand Rapids, Mich. (8) 23,400 gal, (2) 14,000 gal, (12) 9300 gal. At Tonawanda, N. Y. (2) 7000 gal. At Reading, Pa. (9) 4600 gal. At Philadelphia, Pa. (3) 13,700 gal, (3) 9150 gal. Also (5) 15,000 gal. Vertical Welded Steel Mixing Tanks with Turbo agitator. PERRY EQUIPMENT CORP. 1426 N. 6th St., Philadelphia 22, Pa.

FOR SALE: Aqua Ammonia Convertor in excellent condition, complete with all accessories. Capacity two tons anhydrous per hour. Midvalley Chemical Company, Corcoran, California.

FOR SALE: Two St. Regis Valve Type Packers. Missouri Pfister Growers, Carrollton, Missouri.

WANTED EXECUTIVE POSITION: By aggressive individual with twenty five years experience in fertilizer industry, accounting, acidulation, formulation, plant superintendent, purchasing supplies and raw materials, plant layout and construction. Now employed in administrative capacity. Seeking connection with company where salary will be commensurate with experience. Will consider proposition leading to interest in company thru stock purchases. Box # 87, c/o Commercial Fertilizer, 75 Third St., N. W. Atlanta, Ga.

WANTED: Men experienced in sales and administration of large volume fertilizer business. Must have managerial potential. Complete information as to personal history, education and experience required in first letter to Box No. 39, care of Commercial Fertilizer, 75 Third Street, N. W., Atlanta, Georgia.

Wiley & Company, Inc.
Analytical and Consulting Chemists
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LAW & COMPANY
Founded 1903
FERTILIZER CHEMISTS
Three Convenient Laboratories
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SHUEY & COMPANY, INC.
Specialty: Analysis of Fertilizer Materials and Phosphate Rock. Official Chemists for Florida Hard Rock Phosphate Export Association. Official Weigher and Sampler for the National Cottonseed Products Association at Savannah; also Official Chemist for National Cottonseed Products Association.
115 E. Bay Street, Savannah, Ga.

VERMICULITE FINES
(Fertilizer Conditioner)
Truck and Carload Quantities
American Vermiculite Company, Inc.
Phones 2201 & 2301
Roan Mountain, Tennessee

pose; yet, I am certain that most states who have them would not favor being without them. If you didn't have feed standards, what would you, as a control official, do if a feed manufacturer wanted to register a "Chick Starting Mash" at 16% protein? If you didn't have a limited fertilizer grade list it then follows, you would have to register any grade submitted. I doubt if many of the feed and fertilizer manufacturers would want to return again to these possibilities.

If you will pardon the personal reference, I shall never forget a family reunion at Carlsbad, New Mexico, when my daughter, Cynthia, was three years of age. As we were slowly winding our way through Carlsbad Cavern, observing with awe the wonders of time and nature, the silence was broken by the question, "Cynthia, where are we?" To which she replied, "We're right here." I suppose the most logical answer to the question, "Where are we?" with reference to our Association, could perhaps be that "We are right here." But the sixty-four dollar question is "Where are we going?" There is a saying, "We don't know where we're going but we're going," that is appropriate here. Of one thing, I am certain, "Where we are going" depends on **You.** You as individuals, you as control officials, you as businessmen and members of the industry, you as teachers, and research workers, you as members of this Association, and as members of other agencies all working together for a common good both now and in the future. With this in mind, I would like to pass on a few suggestions:

1. That our standards for special purpose mixed feeds be reviewed by all states in this Association with the idea of reducing them or making them more inclusive or otherwise change and improve them as needed.

2. That our resolutions and definitions be carefully studied so they too can be improved.

3. That this Association with the industry and other agencies study with the view of recommending to the state control officials the most practical and economic methods to follow by which information on the distribution of feed and fertilizer can be collected, compiled, and disseminated in a more uniform way.

4. That this Association with the help of the industry and other agencies develop a uniform method of procedure by which deficiencies, violations, mislabeling, or whatever you choose to call them, can best be appraised, evaluated, and published. A violation in one state may not be so in another. In many instances, mislabeling is lumped together in one overall picture without regard to the fact that most of it might be minor or technical violations as compared to a relatively few serious ones. A system by which these violations can be compiled into a uniform inspection report and more equitably evaluated and handled is needed.

5. In most instances, feed and fertilizer control work is separate and apart from the agricultural colleges and experiment stations. What does the average user of feed and fertilizer know about the label, the requirements of the law, and the results of control work? In my opinion, a great contribution to agriculture could be made if a uniform plan were prepared and followed by which the results of feed and fertilizer control work each year, as well as information concerning the laws, were disseminated through the extension service, vocational agriculture, A. & M. Colleges, and other educational facilities.

6. We would not forget to express our appreciation for and pledge our continued cooperation with both the American Feed Control and American Fertilizer Control Officials' Associations; the various feed and fertilizer industry organizations; the agricultural research, service, and educational institutions and agencies without which our Association could not exist—let alone make any progress. I firmly believe we can continue to make progress as long as we work together. The need for the exchange of ideas and the discussions of our mutual problems is a necessary prerequisite to progress and, surely, the wheels of progress will still be turning as long as time exists. I thank you.

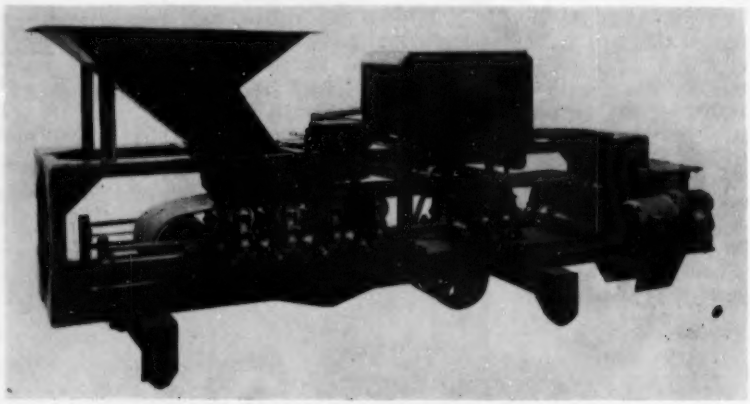
Jeffrey Bulletin On Mud Hog Crushers

Bulletin 864, just published by The Jeffrey Mfg. Co., Columbus 16, Ohio, is offered to all interested through the home office, through one of their 23 district offices, or through their distributors in principal cities and their plants in the U. S., Canada, England and South Africa. The bulletin is fully illustrated, and gives necessary technical data concerning the various types and sizes they make.

McIver To Handle Chicago's Vitorganic

Alexander M. McIver & Son, Charleston, S. C. have been appointed by the Chicago Fertilizer Company, 134 N. LaSalle Street, Chicago, Illinois, as their exclusive sales agents for Vitorganic-Chicago Activated Sludge, which is produced by the Sanitary District of Chicago.

Dwight-Lloyd, Inc., a division of Sintering Machinery Corporation, 319 Sinter Avenue, Netcong, N. J., has designed this new portable Transportofeeder that can be moved to different locations in the plant as required by production needs. The Transportofeeder is a self-contained, completely automatic, feed regulating, continuous weighing scale. It has its own belt conveyor and drive, and a power-operated regulating gate for feeding material at present feed rates.



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